



## SEQUENCE LISTING

<110> Havenga, Menzo  
Vogels, Ronald  
Bout, Abraham

<120> CHIMERIC ADENOVIRUSES

<130> 2183-4123US

<140> US 09/348,354

<141> 1999-07-07

<160> 84

<170> PatentIn version 3.0

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<212> DNA

<213> Human Adenovirus Oligonucleotide

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35

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36

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<210> 14  
<211> 377  
<212> PRT  
<213> Human Adenovirus 8 Fiber Protein

<400> 14

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Lys	Arg	Ala	Arg	Pro	Ser	Glu	Asp	Thr	Phe	Asn	Pro	Val	Tyr	Pro	Tyr
			20					25					30		
Gly	Tyr	Ala	Arg	Asn	Gln	Asn	Ile	Pro	Phe	Leu	Thr	Pro	Pro	Phe	Val
		35					40					45			
Ser	Ser	Asn	Gly	Phe	Gln	Asn	Phe	Pro	Pro	Gly	Val	Leu	Ser	Leu	Lys
	50					55					60				
Leu	Ala	Asp	Pro	Ile	Thr	Ile	Asn	Asn	Gln	Asn	Val	Ser	Leu	Lys	Val
65					70					75					80
Gly	Gly	Gly	Leu	Thr	Leu	Gln	Glu	Glu	Thr	Gly	Lys	Leu	Thr	Val	Asn
				85					90					95	
Thr	Glu	Pro	Pro	Leu	His	Leu	Thr	Asn	Asn	Lys	Leu	Gly	Ile	Ala	Leu
			100					105					110		
Asp	Ala	Pro	Phe	Asp	Val	Ile	Asp	Asn	Lys	Leu	Thr	Leu	Leu	Ala	Gly
		115					120					125			
His	Gly	Leu	Ser	Ile	Ile	Thr	Lys	Glu	Thr	Ser	Thr	Leu	Pro	Gly	Leu
	130					135					140				
Val	Asn	Thr	Leu	Val	Val	Leu	Thr	Gly	Lys	Gly	Ile	Gly	Thr	Asp	Leu
145					150					155					160
Ser	Asn	Asn	Gly	Gly	Asn	Ile	Cys	Val	Arg	Val	Gly	Glu	Gly	Gly	Gly
				165					170					175	
Leu	Ser	Phe	Asn	Asp	Asn	Gly	Asp	Leu	Val	Ala	Phe	Asn	Lys	Lys	Glu
			180					185					190		
Asp	Lys	Arg	Thr	Leu	Trp	Thr	Thr	Pro	Asp	Thr	Ser	Pro	Asn	Cys	Arg
		195					200					205			
Ile	Asp	Gln	Asp	Lys	Asp	Ser	Lys	Leu	Ser	Leu	Val	Leu	Thr	Lys	Cys
	210					215					220				
Gly	Ser	Gln	Ile	Leu	Ala	Asn	Val	Ser	Leu	Ile	Val	Val	Ala	Gly	Arg
225					230					235					240
Tyr	Lys	Ile	Ile	Asn	Asn	Asn	Thr	Asn	Pro	Ala	Leu	Lys	Gly	Phe	Thr
				245					250					255	
Ile	Lys	Leu	Leu	Phe	Asp	Lys	Asn	Gly	Val	Leu	Met	Glu	Ser	Ser	Asn
			260					265					270		
Leu	Gly	Lys	Ser	Tyr	Trp	Asn	Phe	Arg	Asn	Gln	Asn	Ser	Ile	Met	Ser
		275					280					285			

Thr Ala Tyr Glu Lys Ala Ile Gly Phe Met Pro Asn Leu Val Ala Tyr  
 290 295 300  
 Pro Lys Pro Thr Thr Gly Ser Lys Lys Tyr Ala Arg Asp Ile Val Tyr  
 305 310 315 320  
 Gly Asn Ile Tyr Leu Gly Gly Lys Pro His Gln Pro Val Thr Ile Lys  
 325 330 335  
 Thr Thr Phe Asn Gln Glu Thr Gly Cys Glu Tyr Ser Ile Thr Phe Asp  
 340 345 350  
 Phe Ser Trp Ala Lys Thr Tyr Val Asn Val Glu Phe Glu Thr Thr Ser  
 355 360 365  
 Phe Thr Phe Ser Tyr Ile Ala Gln Glu  
 370 375

<210> 15  
 <211> 376  
 <212> PRT  
 <213> Human Adenovirus 9 Fiber Protein

<400> 15

Ser Cys Ser Cys Pro Ser Ala Pro Thr Ile Phe Met Leu Leu Gln Met  
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 Lys Arg Ala Arg Pro Ser Glu Asp Thr Phe Asn Pro Val Tyr Pro Tyr  
 20 25 30  
 Gly Tyr Ala Arg Asn Gln Asn Ile Pro Phe Leu Thr Pro Phe Val  
 35 40 45  
 Ser Ser Asp Gly Phe Gln Asn Phe Pro Pro Gly Val Leu Ser Leu Lys  
 50 55 60  
 Leu Ala Asp Pro Ile Ala Ile Val Asn Gly Asn Val Ser Leu Lys Val  
 65 70 75 80  
 Gly Gly Gly Leu Thr Leu Gln Asp Gly Thr Gly Lys Leu Thr Val Asn  
 85 90 95  
 Ala Asp Pro Pro Leu Gln Leu Thr Asn Asn Lys Leu Gly Ile Ala Leu  
 100 105 110  
 Asp Ala Pro Phe Asp Val Ile Asp Lys Leu Thr Leu Leu Ala Gly His  
 115 120 125  
 Gly Leu Ser Ile Ile Thr Lys Glu Thr Ser Thr Leu Pro Gly Leu Ile  
 130 135 140  
 Asn Thr Leu Val Val Leu Thr Gly Lys Gly Ile Gly Thr Glu Ser Thr  
 145 150 155 160  
 Asp Asn Gly Gly Ser Val Cys Val Arg Val Gly Glu Gly Gly Gly Leu  
 165 170 175  
 Ser Phe Asn Asn Asp Gly Asp Leu Val Ala Phe Asn Lys Lys Glu Asp  
 180 185 190  
 Lys Arg Thr Leu Trp Thr Thr Pro Asp Thr Ser Pro Asn Cys Lys Ile  
 195 200 205  
 Asp Gln Asp Lys Asp Ser Lys Leu Thr Leu Val Leu Thr Lys Cys Gly

210					215					220					
Ser	Gln	Ile	Leu	Ala	Asn	Val	Ser	Leu	Ile	Val	Val	Ala	Gly	Lys	Tyr
225					230					235					240
Lys	Ile	Ile	Asn	Asn	Asn	Thr	Gln	Pro	Ala	Leu	Lys	Gly	Phe	Thr	Ile
			245						250					255	
Lys	Leu	Leu	Phe	Asp	Glu	Asn	Gly	Val	Leu	Met	Glu	Ser	Ser	Asn	Leu
			260					265					270		
Gly	Lys	Ser	Tyr	Trp	Asn	Phe	Arg	Asn	Glu	Asn	Ser	Ile	Met	Ser	Thr
		275					280					285			
Ala	Tyr	Glu	Lys	Ala	Ile	Gly	Phe	Met	Pro	Asn	Leu	Val	Ala	Tyr	Pro
	290					295					300				
Lys	Pro	Thr	Ala	Gly	Ser	Lys	Lys	Tyr	Ala	Arg	Asp	Ile	Val	Tyr	Gly
305					310					315					320
Asn	Ile	Tyr	Leu	Gly	Gly	Lys	Pro	Asp	Gln	Pro	Val	Thr	Ile	Lys	Thr
				325					330					335	
Thr	Phe	Asn	Gln	Glu	Thr	Gly	Cys	Glu	Tyr	Ser	Ile	Thr	Phe	Asp	Phe
			340					345					350		
Ser	Trp	Ala	Lys	Thr	Tyr	Val	Asn	Val	Glu	Phe	Glu	Thr	Thr	Ser	Phe
		355					360					365			
Thr	Phe	Ser	Tyr	Ile	Ala	Gln	Glu								
		370				375									

<210> 16  
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 <212> PRT  
 <213> Human Adenovirus 13 Fiber Protein

<220>  
 <221> Xaa  
 <222> (1)..(385)  
 <223> Can be any amino acid

<400> 16

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Lys	Arg	Ala	Arg	Ser	Ser	Xaa	Asp	Thr	Phe	Asn	Pro	Val	Tyr	Pro	Tyr
			20					25					30		
Gly	Tyr	Ala	Arg	Asn	Gln	Asn	Ile	Xaa	Phe	Xaa	Thr	Pro	Pro	Phe	Val
		35					40					45			
Xaa	Ser	Asp	Gly	Phe	Lys	Asn	Phe	Pro	Pro	Gly	Val	Leu	Ser	Leu	Lys
	50					55					60				
Leu	Ala	Asp	Pro	Ile	Thr	Ile	Ala	Asn	Gly	Asp	Val	Ser	Leu	Lys	Val
65						70					75				80
Gly	Gly	Gly	Leu	Thr	Leu	Gln	Glu	Gly	Ser	Leu	Thr	Val	Asp	Pro	Lys
				85					90					95	
Ala	Pro	Leu	Gln	Leu	Ala	Asn	Asp	Lys	Lys	Leu	Glu	Leu	Val	Tyr	Asp
			100					105					110		

Asp Pro Phe Glu Val Ser Thr Asn Lys Leu Ser Leu Lys Val Gly His  
 115 120 125  
 Gly Leu Lys Val Leu Asp Asp Lys Ser Ala Gly Gly Leu Lys Asp Leu  
 130 135 140  
 Ile Gly Lys Leu Val Val Leu Thr Gly Lys Gly Ile Gly Ile Glu Asn  
 145 150 155 160  
 Leu Gln Asn Asp Asp Gly Ser Ser Arg Gly Val Gly Ile Asn Val Arg  
 165 170 175  
 Leu Gly Thr Asp Gly Gly Leu Ser Phe Asp Arg Lys Gly Glu Leu Val  
 180 185 190  
 Ala Trp Asn Arg Lys Asp Asp Arg Arg Thr Leu Trp Thr Thr Pro Asp  
 195 200 205  
 Pro Ser Pro Asn Cys Lys Ala Glu Thr Glu Lys Asp Ser Lys Leu Thr  
 210 215 220  
 Leu Val Leu Thr Lys Cys Gly Ser Gln Ile Leu Ala Thr Val Ser Ile  
 225 230 235 240  
 Ile Val Leu Lys Gly Lys Tyr Glu Phe Val Lys Lys Glu Thr Glu Pro  
 245 250 255  
 Lys Ser Phe Asp Val Lys Leu Leu Phe Asp Ser Lys Gly Val Leu Leu  
 260 265 270  
 Pro Thr Ser Asn Leu Ser Lys Glu Tyr Trp Asn Tyr Arg Ser Tyr Asp  
 275 280 285  
 Asn Asn Ile Gly Thr Pro Tyr Glu Asn Ala Val Pro Phe Met Pro Asn  
 290 295 300  
 Leu Lys Ala Tyr Pro Lys Pro Thr Lys Thr Ala Ser Asp Lys Ala Glu  
 305 310 315 320  
 Asn Lys Ile Ser Ser Ala Lys Asn Lys Ile Val Ser Asn Phe Tyr Phe  
 325 330 335  
 Gly Gly Gln Ala Tyr Gln Pro Gly Thr Ile Ile Ile Lys Phe Asn Glu  
 340 345 350  
 Glu Ile Asp Glu Thr Cys Ala Tyr Ser Ile Thr Phe Asn Phe Gly Trp  
 355 360 365  
 Gly Lys Val Tyr Asp Asn Pro Glu Pro Phe Asp Thr Thr Ser Phe Thr  
 370 375 380  
 Xaa Ser Tyr Ile Ala Gln Glu  
 385 390

<210> 17  
 <211> 290  
 <212> PRT  
 <213> Human Adenovirus 14 Fiber Protein

<400> 17

His Pro Phe Ile Asn Pro Gly Phe Ile Ser Pro Asn Gly Phe Thr Gln  
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Ser Pro Asp Gly Val Leu Thr Leu Lys Cys Leu Thr Pro Leu Thr Thr  
 20 25 30  
 Thr Gly Gly Ser Leu Gln Leu Lys Val Gly Gly Gly Leu Thr Val Asp  
 35 40 45  
 Asp Thr Asp Gly Thr Leu Gln Glu Asn Ile Gly Ala Thr Thr Pro Leu  
 50 55 60  
 Val Lys Thr Gly His Ser Ile Gly Leu Ser Leu Gly Ala Gly Leu Gly  
 65 70 75 80  
 Thr Asp Glu Asn Lys Leu Cys Thr Lys Leu Gly Glu Gly Leu Thr Phe  
 85 90 95  
 Asn Ser Asn Asn Ile Cys Ile Asp Asp Asn Ile Asn Thr Leu Trp Thr  
 100 105 110  
 Gly Val Asn Pro Thr Glu Ala Asn Cys Gln Met Met Asp Ser Ser Glu  
 115 120 125  
 Ser Asn Asp Cys Lys Leu Ile Leu Thr Leu Val Lys Thr Gly Ala Leu  
 130 135 140  
 Val Thr Ala Phe Val Tyr Val Ile Gly Val Ser Asn Asn Phe Asn Met  
 145 150 155 160  
 Leu Thr Thr Tyr Arg Asn Ile Asn Phe Thr Ala Glu Leu Phe Phe Asp  
 165 170 175  
 Ser Ala Gly Asn Leu Leu Thr Ser Leu Ser Ser Leu Lys Thr Pro Leu  
 180 185 190  
 Asn His Lys Ser Gly Gln Thr Trp Leu Leu Val Pro Leu Leu Met Leu  
 195 200 205  
 Lys Val Ser Cys Pro Ala Gln Leu Leu Ile Leu Ser Ile Ile Ile Leu  
 210 215 220  
 Glu Lys Asn Lys Thr Thr Phe Thr Glu Leu Val Thr Thr Gln Leu Val  
 225 230 235 240  
 Ile Thr Leu Leu Phe Pro Leu Thr Ile Ser Val Met Leu Asn Gln Arg  
 245 250 255  
 Ala Ile Arg Ala Asp Thr Ser Tyr Cys Ile Arg Ile Thr Trp Ser Trp  
 260 265 270  
 Asn Thr Gly Asp Ala Pro Glu Gly Gln Thr Ser Ala Thr Thr Leu Val  
 275 280 285  
 Thr Ser  
 290

<210> 18  
 <211> 344  
 <212> PRT  
 <213> Human Adenovirus 20 Fiber Protein

<400> 18

Ile Gln Asn Ile Pro Phe Leu Thr Pro Pro Phe Val Ser Ser Asp Gly  
 1 5 10 15  
 Leu Gln Asn Phe Pro Pro Gly Val Leu Ser Leu Lys Leu Ala Asp Pro

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Ile	Ala	Ile	Val	Asn	Gly	Asn	Val	Ser	Leu	Lys	Val	Gly	Gly	Gly	Ile
		35					40					45			
Thr	Val	Glu	Gln	Asp	Ser	Gly	Gln	Leu	Ile	Ala	Asn	Pro	Lys	Ala	Pro
	50					55					60				
Leu	Gln	Val	Ala	Asn	Asp	Lys	Leu	Glu	Leu	Ser	Tyr	Ala	Tyr	Pro	Phe
65					70					75					80
Glu	Thr	Ser	Ala	Asn	Lys	Leu	Ser	Leu	Lys	Val	Gly	Gln	Gly	Leu	Lys
				85					90					95	
Val	Leu	Asp	Glu	Lys	Asp	Ser	Gly	Gly	Leu	Gln	Asn	Leu	Leu	Gly	Lys
			100					105					110		
Leu	Val	Val	Leu	Thr	Gly	Lys	Gly	Ile	Gly	Val	Glu	Glu	Leu	Lys	Asn
		115					120					125			
Pro	Asp	Asn	Thr	Asn	Arg	Gly	Val	Gly	Ile	Asn	Val	Arg	Leu	Gly	Lys
	130					135					140				
Asp	Gly	Gly	Leu	Ser	Phe	Asn	Lys	Asn	Gly	Glu	Leu	Val	Ala	Trp	Asn
145					150					155					160
Lys	His	Asn	Asp	Thr	Gly	Thr	Leu	Trp	Thr	Thr	Pro	Asp	Pro	Ser	Pro
				165					170					175	
Asn	Cys	Lys	Ile	Glu	Glu	Val	Lys	Asp	Ser	Lys	Leu	Thr	Leu	Val	Leu
			180					185					190		
Thr	Lys	Cys	Gly	Ser	Gln	Ile	Leu	Ala	Thr	Met	Ala	Phe	Gln	Val	Val
		195					200					205			
Lys	Gly	Thr	Tyr	Glu	Asn	Ile	Ser	Lys	Asn	Thr	Ala	Lys	Asn	Ser	Phe
	210					215					220				
Ser	Ile	Lys	Leu	Leu	Phe	Asp	Asp	Asn	Gly	Lys	Leu	Leu	Glu	Gly	Ser
225					230					235					240
Ser	Leu	Asp	Lys	Asp	Tyr	Trp	Asn	Phe	Arg	Ser	Asp	Asp	Ser	Ile	Ile
				245					250					255	
Pro	Asn	Gln	Tyr	Asp	Asn	Ala	Val	Pro	Phe	Met	Pro	Asn	Leu	Lys	Ala
			260					265					270		
Tyr	Pro	Lys	Pro	Ser	Thr	Val	Leu	Pro	Ser	Thr	Asp	Lys	Asn	Ser	Asn
		275					280					285			
Gly	Lys	Asn	Thr	Ile	Val	Ser	Asn	Leu	Tyr	Leu	Glu	Gly	Lys	Ala	Tyr
	290					295					300				
Gln	Pro	Val	Ala	Val	Thr	Ile	Thr	Phe	Asn	Lys	Glu	Ile	Gly	Cys	Thr
305					310					315					320
Tyr	Ser	Ile	Thr	Phe	Asp	Phe	Gly	Trp	Ala	Lys	Thr	Tyr	Asp	Val	Pro
				325					330					335	
Ile	Pro	Asp	Ser	Ser	Ser	Phe	Thr								
			340												

<210> 19  
 <211> 345  
 <212> PRT



<213> Human Adenovirus 23 Fiber Protein

<400> 19

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20 25 30  
Ala Ile Thr Asn Gly Asp Val Ser Leu Lys Val Gly Gly Gly Leu Thr  
35 40 45  
Val Glu Gln Asp Ser Gly Asn Leu Lys Val Asn Thr Lys Ala Pro Leu  
50 55 60  
Gln Val Ala Ala Asp Lys Gln Leu Glu Ile Ala Leu Ala Asp Pro Phe  
65 70 75 80  
Glu Val Ser Lys Gly Arg Leu Gly Ile Lys Ala Gly His Gly Leu Lys  
85 90 95  
Val Ile Asp Asn Ser Ile Ser Gly Leu Glu Gly Leu Val Gly Thr Leu  
100 105 110  
Val Val Leu Thr Gly His Gly Ile Gly Thr Glu Asn Leu Leu Asn Asn  
115 120 125  
Asp Gly Ser Ser Arg Gly Val Gly Ile Asn Val Arg Leu Gly Lys Asp  
130 135 140  
Gly Gly Leu Ser Phe Asp Lys Lys Gly Asp Leu Val Ala Trp Asn Lys  
145 150 155 160  
Lys Tyr Asp Thr Arg Thr Leu Trp Thr Thr Pro Asp Pro Ser Pro Asn  
165 170 175  
Cys Lys Val Ile Glu Ala Lys Asp Ser Lys Leu Thr Leu Val Leu Thr  
180 185 190  
Lys Cys Gly Ser Gln Ile Leu Ala Asn Met Ser Leu Leu Ile Leu Lys  
195 200 205  
Gly Thr Tyr Glu Tyr Ile Ser Asn Ala Ile Ala Asn Lys Ser Phe Thr  
210 215 220  
Ile Lys Leu Leu Phe Asn Asp Lys Gly Val Leu Met Asp Gly Ser Ser  
225 230 235 240  
Leu Asp Lys Asp Tyr Trp Asn Tyr Lys Ser Asp Asp Ser Val Met Ser  
245 250 255  
Lys Ala Tyr Glu Asn Ala Val Pro Phe Met Pro Asn Leu Lys Ala Tyr  
260 265 270  
Pro Asn Pro Thr Thr Ser Thr Thr Asn Pro Ser Thr Asp Lys Lys Ser  
275 280 285  
Asn Gly Lys Asn Ala Ile Val Ser Asn Val Tyr Leu Glu Gly Arg Ala  
290 295 300  
Tyr Gln Pro Val Ala Ile Thr Ile Thr Phe Asn Lys Glu Thr Gly Cys  
305 310 315 320  
Thr Tyr Ser Met Thr Phe Asp Phe Gly Trp Ser Lys Val Tyr Asn Pro

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Ile Pro Phe Asp Thr Ser Ser Leu Thr					
	340		345		
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<211>	389				
<212>	PRT				
<213>	Human Adenovirus 24 Fiber Protein				
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Lys Arg Ala Arg Pro Ser Glu Asp Thr Phe Asn Pro Val Tyr Pro Tyr					
	20		25		30
Gly Tyr Ala Arg Asn Gln Asn Ile Pro Phe Leu Thr Pro Pro Phe Val					
	35		40		45
Ser Ser Asp Gly Phe Gln Asn Phe Pro Gly Val Leu Ser Leu Lys Leu					
	50		55		60
Ala Asp Pro Ile Ala Ile Thr Asn Gly Asp Tyr Ser Leu Lys Val Gly					
65	70		75		80
Gly Gly Leu Thr Val Glu Lys Asp Ser Gly Asn Leu Lys Val Asn Pro					
	85		90		95
Lys Ala Pro Leu Gln Val Thr Thr Asp Lys Gln Leu Glu Ile Ala Leu					
	100		105		110
Ala Tyr Pro Phe Glu Val Ser Asn Gly Lys Leu Gly Ile Lys Ala Gly					
	115		120		125
His Gly Leu Lys Val Ile Asp Lys Ile Ala Gly Leu Glu Gly Leu Ala					
	130		135		140
Gly Thr Leu Val Val Leu Thr Gly Lys Gly Ile Gly Thr Glu Asn Leu					
145	150		155		160
Glu Asn Ser Asp Gly Ser Ser Arg Gly Val Gly Ile Asn Val Arg Leu					
	165		170		175
Ala Lys Asp Gly Gly Leu Ser Phe Asp Lys Lys Gly Asp Leu Val Ala					
	180		185		190
Trp Asn Lys His Asp Asp Arg Arg Thr Leu Trp Thr Thr Pro Asp Pro					
	195		200		205
Ser Pro Asn Cys Thr Ile Asp Gln Glu Arg Asp Ser Lys Leu Thr Leu					
	210		215		220
Val Leu Thr Lys Cys Gly Ser Gln Ile Leu Ala Asn Val Ser Leu Leu					
225	230		235		240
Val Val Lys Gly Lys Phe Ser Asn Ile Asn Asn Asn Thr Asn Pro Thr					
	245		250		255
Asp Lys Lys Ile Thr Val Lys Leu Leu Phe Asn Glu Lys Gly Val Leu					
	260		265		270
Met Asp Ser Ser Thr Leu Lys Lys Glu Tyr Trp Asn Tyr Arg Asn Asp					
	275		280		285

Asn Ser Thr Val Ser Gln Ala Tyr Asp Asn Ala Val Pro Phe Met Pro  
 290 295 300  
 Asn Ile Lys Ala Tyr Pro Lys Pro Thr Thr Asp Thr Ser Ala Lys Pro  
 305 310 315 320  
 Glu Asp Lys Lys Ser Ala Ala Lys Arg Tyr Ile Val Ser Asn Val Tyr  
 325 330 335  
 Ile Gly Gly Leu Pro Asp Lys Thr Val Val Ile Thr Ile Lys Phe Asn  
 340 345 350  
 Ala Glu Thr Glu Cys Ala Tyr Ser Ile Thr Phe Glu Phe Thr Trp Ala  
 355 360 365  
 Lys Thr Phe Glu Asp Val Trp Phe Asp Ser Ser Ser Phe Thr Phe Ser  
 370 375 380

Tyr Ile Ala Gln Glu  
 385

<210> 21  
 <211> 374  
 <212> PRT  
 <213> Human Adenovirus 25 Fiber Protein

<220>  
 <221> Xaa  
 <222> (141)..(141)  
 <223> Can be any amino acid

<400> 21

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 Lys Arg Ala Arg Pro Ser Glu Asp Thr Phe Asn Pro Val Tyr Pro Gly  
 20 25 30  
 Tyr Ala Arg Asn Gln Asn Ile Pro Phe Leu Thr Ile Pro Pro Phe Val  
 35 40 45  
 Ser Ser Asp Gly Phe Gln Asn Phe Pro Pro Gly Val Leu Ser Leu Lys  
 50 55 60  
 Leu Ala Asp Pro Ile Thr Ile Ser Asn Gly Asp Val Ser Leu Lys Val  
 65 70 75 80  
 Gly Gly Gly Leu Thr Val Glu Gln Asp Ser Gly Asn Leu Ser Val Asn  
 85 90 95  
 Pro Lys Ala Pro Leu Gln Val Gly Thr Asp Lys Lys Leu Glu Leu Ala  
 100 105 110  
 Leu Ala Pro Pro Phe Asn Val Lys Asp Asn Lys Leu Asp Leu Leu Val  
 115 120 125  
 Gly Asp Gly Leu Lys Val Ile Asp Lys Ser Ile Ser Xaa Leu Pro Gly  
 130 135 140  
 Leu Leu Asn Tyr Leu Val Val Leu Thr Gly Lys Gly Ile Gly Asn Glu  
 145 150 155 160

Glu Leu Lys Leu Asp Asp Gly Ser Asn Lys Val Gly Leu Cys Val Arg  
 165 170 175  
 Ile Gly Glu Gly Gly Gly Leu Thr Phe Asp Asp Lys Gly Tyr Leu Val  
 180 185 190  
 Ala Trp Asn Lys Lys His Asp Ile Arg Thr Leu Trp Thr Thr Leu Asp  
 195 200 205  
 Pro Ser Pro Asn Cys Arg Ile Asp Val Asp Lys Asp Ser Lys Leu Thr  
 210 215 220  
 Leu Val Leu Thr Lys Cys Gly Ser Gln Ile Leu Ala Asn Val Ser Leu  
 225 230 235 240  
 Leu Val Val Lys Gly Arg Phe Gln Asn Leu Asn Tyr Lys Thr Asn Pro  
 245 250 255  
 Asn Leu Pro Lys Thr Phe Thr Ile Lys Leu Leu Phe Asp Glu Asn Gly  
 260 265 270  
 Ile Leu Lys Asp Ser Ser Asn Leu Asp Lys Asn Tyr Trp Asn Tyr Arg  
 275 280 285  
 Asn Gly Asn Ser Ile Leu Ala Glu Gln Tyr Lys Asn Ala Val Gly Phe  
 290 295 300  
 Met Pro Asn Leu Ala Ala Tyr Pro Lys Ser Thr Thr Thr Gln Ser Lys  
 305 310 315 320  
 Leu Tyr Ala Arg Asn Thr Ile Phe Gly Asn Thr Tyr Leu Asp Ser Gln  
 325 330 335  
 Ala Tyr Asn Pro Val Val Ile Lys Ile Thr Phe Asn Gln Glu Ala Asp  
 340 345 350  
 Ser Ala Tyr Ser Ile Thr Leu Asn Tyr Ser Trp Gly Lys Asp Tyr Glu  
 355 360 365  
 Asn Ile Pro Phe Asp Ser  
 370

<210> 22  
 <211> 334  
 <212> PRT  
 <213> Human Adenovirus 27 Fiber Protein

<400> 22

Ile Pro Phe Leu Thr Pro Pro Phe Val Ser Ser Asp Gly Phe Lys Asn  
 1 5 10 15  
 Phe Pro Pro Gly Val Leu Ser Leu Lys Leu Ala Asp Pro Ile Thr Ile  
 20 25 30  
 Thr Asn Gly Asp Val Ser Leu Lys Val Gly Gly Gly Leu Val Val Glu  
 35 40 45  
 Lys Glu Ser Gly Lys Leu Ser Val Asp Pro Lys Thr Pro Leu Gln Val  
 50 55 60  
 Ala Ser Asp Asn Lys Leu Glu Leu Ser Tyr Asn Ala Pro Phe Lys Val  
 65 70 75 80  
 Glu Asn Asp Lys Leu Ser Leu Asp Val Gly His Gly Leu Lys Val Ile

85								90				95			
Gly	Asn	Glu	Val	Ser	Ser	Leu	Pro	Gly	Leu	Ile	Asn	Lys	Leu	Val	Val
			100					105					110		
Leu	Thr	Gly	Lys	Gly	Ile	Gly	Thr	Glu	Leu	Leu	Lys	Glu	Gln	Asn	Ser
		115					120					125			
Asp	Lys	Ile	Ile	Gly	Val	Gly	Ile	Asn	Val	Arg	Ala	Arg	Gly	Gly	Leu
	130					135					140				
Ser	Phe	Asp	Asn	Asp	Gly	Tyr	Leu	Val	Ala	Trp	Asn	Pro	Lys	Tyr	Asp
145					150					155					160
Thr	Arg	Thr	Leu	Trp	Thr	Thr	Pro	Asp	Thr	Ser	Pro	Asn	Cys	Lys	Met
				165				170						175	
Leu	Thr	Lys	Lys	Asp	Ser	Lys	Leu	Thr	Leu	Thr	Leu	Thr	Lys	Cys	Gly
			180					185					190		
Ser	Gln	Ile	Leu	Gly	Asn	Val	Ser	Leu	Leu	Ala	Val	Ser	Gly	Lys	Tyr
		195					200					205			
Leu	Asn	Met	Thr	Lys	Asp	Glu	Thr	Gly	Val	Lys	Ile	Ile	Leu	Leu	Phe
	210					215					220				
Asp	Arg	Asn	Gly	Val	Leu	Met	Gln	Glu	Ser	Ser	Leu	Asp	Lys	Glu	Tyr
225					230					235					240
Trp	Met	Tyr	Arg	Asn	Asp	Asn	Asn	Val	Ile	Gly	Thr	Pro	Tyr	Glu	Asn
				245				250						255	
Ala	Val	Gly	Phe	Met	Pro	Asn	Leu	Val	Ala	Tyr	Pro	Lys	Pro	Thr	Ser
			260					265					270		
Ala	Asp	Ala	Lys	Asn	Tyr	Ser	Arg	Ser	Lys	Ile	Ile	Ser	Asn	Tyr	Leu
		275					280					285			
Lys	Gly	Leu	Ile	Tyr	Gln	Pro	Val	Ile	Ile	Ile	Ala	Ser	Phe	Asn	Gln
	290					295					300				
Glu	Thr	Thr	Asn	Gly	Cys	Val	Tyr	Ser	Ile	Ser	Phe	Asp	Phe	Thr	Cys
305					310					315					320
Ser	Lys	Asp	Tyr	Thr	Gly	Gln	Gln	Phe	Asp	Val	Thr	Ser	Phe		
				325				330							

<210> 23  
 <211> 374  
 <212> PRT  
 <213> Human Adenovirus 28 Fiber Protein  
 <400> 23

Ser	Cys	Ser	Cys	Pro	Ser	Ala	Pro	Thr	Ile	Phe	Met	Leu	Leu	Gln	Met
1				5					10					15	
Lys	Arg	Ala	Arg	Pro	Ser	Glu	Asp	Thr	Phe	Asn	Pro	Val	Tyr	Pro	Tyr
			20					25					30		
Gly	Tyr	Ala	Arg	Asn	Gln	Asn	Ile	Pro	Phe	Leu	Thr	Pro	Pro	Phe	Val
		35					40					45			
Ser	Ser	Asp	Gly	Phe	Gln	Asn	Phe	Pro	Pro	Gly	Val	Leu	Ser	Leu	Lys
	50					55					60				

Leu Ala Asp Pro Ile Thr Ile Ala Asn Gly Asp Val Ser Leu Lys Leu  
 65 70 75 80  
 Gly Gly Gly Leu Thr Val Glu Lys Glu Ser Gly Asn Leu Thr Val Asn  
 85 90 95  
 Pro Lys Ala Pro Leu Gln Val Ala Ser Gly Gln Leu Glu Leu Ala Tyr  
 100 105 110  
 Tyr Ser Pro Phe Asp Val Lys Asn Asn Met Leu Thr Leu Lys Ala Gly  
 115 120 125  
 His Gly Leu Ala Val Val Thr Lys Asp Asn Thr Asp Leu Gln Pro Leu  
 130 135 140  
 Met Gly Thr Leu Val Val Leu Thr Gly Lys Gly Ile Gly Thr Gly Thr  
 145 150 155 160  
 Ser Ala His Gly Gly Thr Ile Asp Val Arg Ile Gly Lys Asn Gly Ser  
 165 170 175  
 Leu Ala Phe Asp Lys Asn Gly Asp Leu Val Ala Trp Asp Lys Glu Asn  
 180 185 190  
 Asp Arg Arg Thr Leu Trp Thr Thr Pro Asp Thr Ser Pro Asn Cys Lys  
 195 200 205  
 Met Ser Glu Val Lys Asp Ser Lys Leu Thr Leu Ile Leu Thr Lys Cys  
 210 215 220  
 Gly Ser Gln Ile Leu Gly Ser Val Ser Leu Leu Ala Val Lys Gly Glu  
 225 230 235 240  
 Tyr Gln Asn Met Thr Ala Ser Thr Asn Lys Asn Val Lys Ile Thr Leu  
 245 250 255  
 Leu Phe Asp Ala Asn Gly Val Leu Leu Glu Gly Ser Ser Leu Asp Lys  
 260 265 270  
 Glu Tyr Trp Asn Phe Arg Asn Asn Asp Ser Thr Val Ser Gly Lys Tyr  
 275 280 285  
 Glu Asn Ala Val Pro Phe Met Pro Asn Ile Thr Ala Tyr Lys Pro Val  
 290 295 300  
 Asn Ser Lys Ser Tyr Ala Arg Ser His Ile Phe Gly Asn Val Tyr Ile  
 305 310 315 320  
 Asp Ala Lys Pro Tyr Asn Pro Val Val Ile Lys Ile Ser Phe Asn Gln  
 325 330 335  
 Glu Thr Gln Asn Asn Cys Val Tyr Ser Ile Ser Phe Asp Tyr Thr Cys  
 340 345 350  
 Ser Lys Glu Tyr Thr Gly Met Gln Phe Asp Val Thr Ser Phe Thr Phe  
 355 360 365  
 Ser Tyr Ile Ala Gln Glu  
 370

<210> 24  
 <211> 343  
 <212> PRT  
 <213> Human Adenovirus 29 Fiber Protein

<400> 24

Gln Asn Ile Pro Phe Leu Thr Pro Pro Phe Val Ser Ser Asp Gly Phe  
1 5 10 15  
Lys Asn Phe Pro Pro Gly Val Leu Ser Leu Lys Leu Ala Asp Pro Ile  
20 25 30  
Ala Ile Thr Asn Gly Asp Val Ser Leu Lys Val Gly Gly Gly Leu Thr  
35 40 45  
Val Glu Gln Asp Ser Gly Asn Leu Ser Val Asn Pro Lys Ala Pro Leu  
50 55 60  
Gln Val Gly Thr Asp Lys Lys Leu Glu Leu Ala Leu Ala Pro Pro Phe  
65 70 75 80  
Asp Val Arg Asp Asn Lys Leu Ala Ile Leu Val Gly Asp Gly Leu Lys  
85 90 95  
Val Ile Asp Arg Ser Ile Ser Asp Leu Pro Gly Leu Leu Asn Tyr Leu  
100 105 110  
Val Val Leu Thr Gly Lys Gly Ile Gly Asn Glu Glu Leu Lys Asn Asp  
115 120 125  
Asp Gly Ser Asn Lys Gly Val Gly Leu Cys Val Arg Ile Gly Glu Gly  
130 135 140  
Gly Gly Leu Thr Phe Asp Asp Lys Gly Tyr Leu Val Ala Trp Asn Asn  
145 150 155 160  
Lys His Asp Ile Arg Thr Leu Trp Thr Thr Leu Asp Pro Ser Pro Asn  
165 170 175  
Cys Lys Ile Asp Ile Glu Lys Asp Ser Lys Leu Thr Leu Val Leu Thr  
180 185 190  
Lys Cys Gly Ser Gln Ile Leu Ala Asn Val Ser Leu Ile Ile Val Asn  
195 200 205  
Gly Lys Phe Lys Ile Leu Asn Asn Lys Thr Asp Pro Ser Leu Pro Lys  
210 215 220  
Ser Phe Asn Ile Lys Leu Leu Phe Asp Gln Asn Gly Val Leu Leu Glu  
225 230 235 240  
Asn Ser Asn Ile Glu Lys Gln Tyr Leu Asn Phe Arg Ser Gly Asp Ser  
245 250 255  
Ile Leu Pro Glu Pro Tyr Lys Asn Ala Ile Gly Phe Met Pro Asn Leu  
260 265 270  
Leu Ala Tyr Ala Lys Ala Thr Thr Asp Gln Ser Lys Ile Tyr Ala Arg  
275 280 285  
Asn Thr Thr Tyr Gly Asn Ile Tyr Leu Asp Asn Gln Pro Tyr Asn Pro  
290 295 300  
Val Val Ile Lys Ile Thr Phe Asn Asn Glu Ala Asp Ser Ala Tyr Ser  
305 310 315 320  
Ile Thr Phe Asn Tyr Ser Trp Thr Lys Asp Tyr Asp Asn Ile Pro Phe  
325 330 335

Asp Ser Thr Ser Phe Thr Ser  
340

<210> 25  
<211> 385  
<212> PRT  
<213> Human Adenovirus 30 Fiber Protein

<220>  
<221> Xaa  
<222> (23)..(97)  
<223> Can be any amino acid

<400> 25

Ser	Cys	Ser	Cys	Pro	Ser	Ala	Pro	Thr	Ile	Phe	Met	Leu	Leu	Gln	Met
1				5					10					15	
Lys	Arg	Ala	Arg	Pro	Ser	Xaa	Asp	Thr	Phe	Asn	Pro	Val	Tyr	Pro	Tyr
			20					25					30		
Gly	Tyr	Ala	Arg	Asn	Gln	Asn	Ile	Pro	Phe	Xaa	Thr	Pro	Pro	Phe	Val
		35					40					45			
Xaa	Ser	Asp	Gly	Phe	Lys	Asn	Phe	Pro	Pro	Gly	Val	Leu	Ser	Leu	Lys
	50					55					60				
Leu	Ala	Asp	Pro	Ile	Ala	Ile	Thr	Asn	Gly	Asp	Tyr	Ser	Leu	Lys	Val
65					70					75					80
Gly	Gly	Gly	Leu	Thr	Val	Glu	Gln	Asp	Ser	Gly	Asn	Leu	Ser	Val	Asn
				85					90					95	
Xaa	Lys	Ala	Pro	Leu	Gln	Val	Gly	Thr	Asp	Lys	Lys	Leu	Glu	Leu	Ala
			100					105					110		
Leu	Ala	Pro	Pro	Phe	Asp	Val	Arg	Asp	Asn	Lys	Leu	Ala	Ile	Leu	Val
		115					120					125			
Gly	Asp	Gly	Leu	Lys	Val	Ile	Asp	Arg	Ser	Ile	Ser	Asp	Leu	Pro	Gly
	130					135					140				
Leu	Leu	Asn	Tyr	Leu	Val	Val	Xaa	Thr	Gly	Lys	Gly	Ile	Gly	Asn	Glu
145					150					155					160
Glu	Leu	Lys	Asn	Asp	Asp	Gly	Ser	Asn	Lys	Gly	Val	Gly	Leu	Cys	Val
			165						170					175	
Arg	Ile	Gly	Glu	Gly	Gly	Gly	Leu	Thr	Xaa	Asp	Asp	Lys	Gly	Tyr	Leu
			180					185					190		
Val	Ala	Trp	Asn	Asn	Lys	His	Asp	Ile	Arg	Thr	Leu	Trp	Thr	Thr	Leu
		195					200					205			
Asp	Pro	Ser	Pro	Asn	Cys	Lys	Ile	Asp	Glu	Lys	Asp	Ser	Lys	Leu	Thr
	210					215					220				
Leu	Val	Leu	Thr	Lys	Cys	Gly	Ser	Gln	Ile	Leu	Ala	Asn	Val	Ser	Leu
225					230					235					240
Ile	Ile	Val	Asn	Gly	Lys	Phe	Lys	Ile	Leu	Asn	Asn	Lys	Thr	Asp	Pro
			245						250					255	



Ser Leu Pro Lys Ser Phe Asn Ile Lys Leu Leu Phe Asp Gln Asn Gly  
 260 265 270  
 Val Leu Leu Glu Asn Ser Asn Ile Glu Lys Gln Tyr Leu Asn Phe Arg  
 275 280 285  
 Ser Gly Asp Ser Ile Leu Pro Glu Pro Tyr Lys Asn Ala Ile Gly Phe  
 290 295 300  
 Met Pro Asn Leu Leu Ala Tyr Ala Lys Ala Thr Thr Asp Gln Ser Lys  
 305 310 315 320  
 Thr Tyr Ala Arg Asn Thr Ile Tyr Gly Asn Ile Tyr Leu Asp Asn Gln  
 325 330 335  
 Pro Tyr Asn Pro Val Val Ile Lys Ile Thr Phe Asn Asn Glu Ala Asp  
 340 345 350  
 Ser Ala Tyr Ser Ile Thr Phe Asn Tyr Ser Trp Thr Lys Asp Tyr Asp  
 355 360 365  
 Asn Ile Pro Phe Asp Ser Thr Ser Phe Thr Phe Ser Tyr Ile Ala Gln  
 370 375 380

Glu  
385

<210> 26  
 <211> 389  
 <212> PRT  
 <213> Human Adenovirus 32 Fiber Protein  
 <400> 26

Ser Cys Ser Pro Ser Ala Pro Thr Ile Phe Met Leu Leu Gln Met Lys  
 1 5 10 15  
 Arg Ala Arg Pro Ser Glu Asp Thr Phe Asn Pro Val Tyr Pro Tyr Gly  
 20 25 30  
 Tyr Ala Arg Asn Gln Asn Ile Pro Phe Leu Thr Pro Pro Phe Val Ser  
 35 40 45  
 Ser Asp Gly Phe Gln Asn Phe Pro Pro Gly Val Leu Ser Leu Lys Leu  
 50 55 60  
 Ala Asp Pro Ile Thr Ile Ala Asn Gly Asn Val Ser Leu Lys Val Gly  
 65 70 75 80  
 Gly Gly Leu Thr Leu Glu Gln Asp Ser Gly Lys Leu Ile Val Asn Pro  
 85 90 95  
 Lys Ala Pro Leu Gln Val Ala Asn Asp Lys Leu Glu Leu Ser Tyr Ala  
 100 105 110  
 Asp Pro Phe Glu Thr Ser Ala Asn Lys Leu Ser Leu Lys Val Gly His  
 115 120 125  
 Gly Leu Lys Val Leu Asp Glu Lys Asn Ala Gly Gly Leu Lys Asp Leu  
 130 135 140  
 Ile Gly Thr Leu Val Val Leu Thr Asp Lys Gly Ile Gly Val Glu Glu  
 145 150 155 160  
 Leu Lys Asn Ala Asp Asn Thr Asn Arg Gly Val Gly Ile Asn Val Arg

165								170				175			
Leu	Gly	Lys	Asp	Gly	Gly	Leu	Ser	Phe	Asp	Lys	Lys	Gly	Asp	Leu	Val
			180					185					190		
Ala	Trp	Asn	Lys	His	Asp	Asp	Arg	Arg	Thr	Leu	Trp	Thr	Thr	Pro	Asp
		195					200					205			
Pro	Ser	Pro	Asn	Cys	Thr	Thr	Asp	Glu	Glu	Arg	Asp	Ser	Lys	Leu	Thr
	210					215					220				
Leu	Val	Leu	Thr	Lys	Cys	Gly	Ser	Gln	Ile	Leu	Ala	Asn	Val	Ser	Leu
225					230					235					240
Leu	Val	Val	Lys	Gly	Lys	Phe	Ser	Asn	Ile	Asn	Asn	Asn	Thr	Asn	Pro
				245					250					255	
Thr	Asp	Lys	Lys	Ile	Thr	Val	Lys	Leu	Leu	Phe	Asn	Glu	Lys	Gly	Val
			260					265					270		
Leu	Met	Asp	Ser	Ser	Ser	Leu	Lys	Lys	Glu	Tyr	Trp	Asn	Tyr	Arg	Asn
		275					280					285			
Asp	Asn	Ser	Thr	Ser	Gln	Ala	Tyr	Asp	Asn	Ala	Val	Pro	Phe	Met	Pro
	290					295					300				
Asn	Ile	Lys	Ala	Tyr	Pro	Lys	Pro	Thr	Thr	Asp	Thr	Ser	Ala	Lys	Pro
305					310					315					320
Glu	Asp	Lys	Lys	Ser	Ala	Ala	Lys	Arg	Tyr	Ile	Val	Ser	Asn	Val	Tyr
				325					330					335	
Ile	Gly	Gly	Leu	Pro	Asp	Lys	Thr	Val	Val	Ile	Thr	Ile	Lys	Leu	Asn
			340					345					350		
Ala	Glu	Thr	Glu	Ser	Ala	Tyr	Ser	Met	Thr	Phe	Glu	Phe	Thr	Trp	Ala
		355					360					365			
Lys	Thr	Phe	Glu	Asn	Leu	Gln	Phe	Asp	Ser	Ser	Ser	Phe	Thr	Phe	Ser
	370					375					380				
Tyr	Ile	Ala	Gln	Glu											
385															

<210> 27  
 <211> 391  
 <212> PRT  
 <213> Human Adenovirus 33 Fiber Protein

<400> 27

Ser	Cys	Ser	Cys	Pro	Ser	Ala	Pro	Thr	Ile	Phe	Met	Leu	Leu	Gln	Met
1				5					10					15	
Lys	Arg	Ala	Arg	Pro	Ser	Glu	Asp	Thr	Phe	Asn	Pro	Val	Tyr	Pro	Tyr
			20					25					30		
Gly	Tyr	Ala	Arg	Asn	Gln	Asn	Ile	Pro	Phe	Leu	Thr	Pro	Pro	Phe	Val
		35					40					45			
Ser	Ser	Asp	Gly	Phe	Lys	Asn	Phe	Pro	Pro	Gly	Val	Leu	Ser	Leu	Lys
	50					55					60				
Leu	Ala	Asp	Pro	Ile	Thr	Ile	Thr	Asn	Gly	Asp	Val	Ser	Leu	Lys	Val
65					70					75					80

```
<210> 28
<211> 338
<212> PRT
<213> Human Adenovirus 34 Fiber Protein
```

<400> 28

Ser	Cys	Ser	Cys	Pro	Ser	Ala	Pro	Thr	Ile	Phe	Met	Leu	Leu	Gln	Met	
1				5					10					15		
Lys	Arg	Ala	Arg	Pro	Ser	Glu	Asp	Thr	Phe	Asn	Pro	Val	Tyr	Pro	Tyr	
			20					25					30			
Glu	Asp	Glu	Ser	Thr	Ser	Gln	His	Pro	Phe	Ile	Asn	Pro	Gly	Phe	Ile	
		35					40					45				
Ser	Pro	Asn	Gly	Phe	Thr	Gln	Ser	Pro	Asp	Gly	Val	Leu	Thr	Leu	Lys	
	50					55					60					
Cys	Leu	Thr	Pro	Leu	Thr	Thr	Thr	Gly	Gly	Ser	Leu	Gln	Leu	Lys	Val	
65					70					75				80		
Gly	Gly	Gly	Leu	Thr	Val	Asp	Asp	Thr	Asp	Gly	Thr	Leu	Gln	Lys	Asn	
			85						90					95		
Ile	Arg	Ala	Thr	Thr	Pro	Ile	Thr	Lys	Asn	Asn	His	Ser	Val	Glu	Leu	
			100					105					110			
Thr	Ile	Gly	Asn	Gly	Leu	Glu	Thr	Gln	His	Asn	Lys	Leu	Cys	Ala	Lys	
		115				120						125				
Leu	Gly	Asn	Gly	Asn	Leu	Lys	Phe	Asn	Asn	Gly	Asp	Ile	Cys	Ile	Lys	
	130					135					140					
Asp	Ser	Ile	Asn	Thr	Leu	Trp	Thr	Gly	Ile	Asn	Pro	Pro	Asn	Cys	Gln	
145					150					155					160	
Ile	Val	Glu	Asn	Thr	Asn	Thr	Asn	Asp	Gly	Lys	Leu	Thr	Leu	Val	Leu	
			165						170					175		
Val	Lys	Asn	Gly	Gly	Leu	Val	Asn	Gly	Tyr	Val	Ser	Leu	Val	Gly	Val	
			180					185					190			
Ser	Asp	Thr	Val	Asn	Gln	Met	Phe	Thr	Gln	Lys	Thr	Ala	Asn	Ile	Gln	
		195					200					205				
Leu	Arg	Leu	Tyr	Phe	Asp	Ser	Ser	Gly	Asn	Leu	Leu	Thr	Asp	Glu	Ser	
	210					215					220					
Asp	Leu	Lys	Ile	Pro	Leu	Lys	Asn	Lys	Ser	Ser	Thr	Ala	Thr	Ser	Glu	
225					230					235					240	
Thr	Val	Ala	Ser	Ser	Lys	Ala	Phe	Met	Pro	Ser	Thr	Thr	Ala	Tyr	Pro	
				245					250					255		
Phe	Asn	Thr	Thr	Thr	Arg	Asp	Ser	Glu	Asn	Tyr	Ile	His	Gly	Ile	Cys	
			260					265					270			
Tyr	Tyr	Met	Thr	Ser	Tyr	Asp	Arg	Ser	Leu	Phe	Pro	Leu	Asn	Ile	Ser	
		275				280						285				
Ile	Met	Leu	Asn	Ser	Arg	Met	Ile	Ser	Ser	Asn	Val	Ala	Tyr	Ala	Ile	
	290					295					300					
Gln	Phe	Glu	Trp	Asn	Leu	Asn	Ala	Ser	Glu	Ser	Pro	Glu	Lys	Gln	His	
305					310					315					320	
Met	Thr	Leu	Thr	Thr	Ser	Pro	Phe	Phe	Phe	Ser	Tyr	Ile	Ile	Glu	Asp	
				325					330					335		

Asp Asn

<210> 29  
<211> 338  
<212> PRT  
<213> Human Adenovirus 35 Fiber Protein

<400> 29

Ser	Cys	Ser	Cys	Pro	Ser	Ala	Pro	Thr	Ile	Phe	Met	Leu	Leu	Gln	Met
1				5					10					15	
Lys	Arg	Ala	Arg	Pro	Ser	Glu	Asp	Thr	Phe	Asn	Pro	Val	Tyr	Pro	Tyr
			20					25					30		
Glu	Asp	Glu	Ser	Thr	Ser	Gln	His	Pro	Phe	Ile	Asn	Pro	Gly	Phe	Ile
		35					40					45			
Ser	Pro	Asn	Gly	Phe	Thr	Gln	Ser	Pro	Asp	Gly	Val	Leu	Thr	Leu	Lys
	50					55					60				
Cys	Leu	Thr	Pro	Leu	Thr	Thr	Thr	Gly	Gly	Ser	Leu	Gln	Leu	Lys	Val
65					70				75					80	
Gly	Gly	Gly	Leu	Thr	Val	Asp	Asp	Thr	Asp	Gly	Thr	Leu	Gln	Glu	Asn
				85					90					95	
Ile	Arg	Ala	Thr	Ala	Pro	Ile	Thr	Lys	Asn	Asn	His	Ser	Val	Glu	Leu
			100					105					110		
Ser	Ile	Gly	Asn	Gly	Leu	Glu	Thr	Gln	Asn	Asn	Lys	Leu	Cys	Ala	Lys
		115					120					125			
Leu	Gly	Asn	Gly	Leu	Lys	Phe	Asn	Asn	Gly	Asp	Ile	Cys	Ile	Lys	Asp
	130					135					140				
Ser	Ile	Asn	Thr	Leu	Trp	Thr	Gly	Ile	Asn	Pro	Pro	Pro	Asn	Cys	Gln
145					150					155					160
Ile	Val	Glu	Asn	Thr	Asn	Thr	Asn	Asp	Gly	Lys	Leu	Thr	Leu	Val	Leu
				165					170					175	
Val	Lys	Asn	Gly	Gly	Leu	Val	Asn	Gly	Tyr	Val	Ser	Leu	Val	Gly	Val
			180					185					190		
Ser	Asp	Thr	Val	Asn	Gln	Met	Phe	Thr	Gln	Lys	Thr	Ala	Asn	Ile	Gln
		195					200					205			
Leu	Arg	Leu	Tyr	Phe	Asp	Ser	Ser	Gly	Asn	Leu	Leu	Thr	Glu	Glu	Ser
	210					215					220				
Asp	Leu	Lys	Ile	Pro	Leu	Lys	Asn	Lys	Ser	Ser	Thr	Ala	Thr	Ser	Glu
225					230				235						240
Thr	Val	Ala	Ser	Ser	Lys	Ala	Phe	Met	Pro	Ser	Thr	Thr	Ala	Tyr	Pro
				245					250					255	
Phe	Asn	Thr	Thr	Thr	Arg	Asp	Ser	Glu	Asn	Tyr	Ile	His	Gly	Ile	Cys
			260					265					270		
Tyr	Tyr	Met	Thr	Ser	Tyr	Asp	Arg	Ser	Leu	Phe	Pro	Leu	Asn	Ile	Ser
		275					280					285			

Ile Met Leu Asn Ser Arg Met Ile Ser Ser Asn Val Ala Tyr Ala Ile  
290 295 300

Gln Phe Glu Trp Asn Leu Asn Ala Ser Glu Ser Pro Glu Ser Asn Ile  
305 310 315 320

Met Thr Leu Thr Thr Ser Pro Phe Phe Phe Ser Tyr Ile Thr Glu Asp  
325 330 335

Asp Asn

<210> 30

<211> 391

<212> PRT

<213> Human Adenovirus 36 Fiber Protein

<400> 30

Ser Cys Ser Cys Pro Ser Ala Pro Thr Ile Phe Met Leu Leu Gln Met  
1 5 10 15

Lys Arg Ala Arg Pro Ser Glu Asp Thr Phe Asn Pro Val Tyr Pro Tyr  
20 25 30

Gly Tyr Ala Arg Asn Gln Asn Ile Pro Phe Leu Thr Pro Pro Phe Val  
35 40 45

Ser Ser Asp Gly Phe Lys Asn Phe Pro Pro Gly Val Leu Ser Leu Lys  
50 55 60

Leu Ala Asp Pro Ile Ala Ile Val Asn Gly Asp Val Ser Leu Lys Val  
65 70 75 80

Gly Gly Gly Leu Thr Val Glu Gln Asp Ser Gly Lys Leu Lys Val Asn  
85 90 95

Pro Lys Ile Pro Leu Gln Val Val Asn Lys Gln Leu Glu Leu Ala Thr  
100 105 110

Asp Lys Pro Phe Lys Ile Glu Asn Asn Lys Leu Ala Leu Asp Val Gly  
115 120 125

His Gly Leu Lys Val Ile Asp Lys Thr Ile Ser Asp Leu Gln Gly Leu  
130 135 140

Val Gly Lys Leu Val Val Leu Thr Gly Val Gly Ile Gly Thr Glu Thr  
145 150 155 160

Leu Lys Asp Lys Asn Asp Lys Val Ile Gly Ser Ala Val Asn Val Arg  
165 170 175

Leu Gly Lys Asp Gly Gly Leu Asp Phe Asn Lys Lys Gly Asp Leu Val  
180 185 190

Ala Trp Asn Arg Tyr Asp Asp Arg Arg Thr Leu Trp Thr Thr Pro Asp  
195 200 205

Pro Ser Pro Asn Cys Lys Val Tyr Glu Ala Lys Ser Lys Leu Thr Leu  
210 215 220

Val Leu Thr Lys Cys Gly Ser Gln Ile Leu Ala Ser Val Ala Leu Leu  
225 230 235 240

Ile Val Lys Gly Lys Tyr Gln Thr Ile Ser Glu Ser Thr Ile Pro Lys

245								250				255				
Asp	Gln	Arg	Asn	Phe	Ser	Val	Lys	Leu	Met	Phe	Asp	Glu	Lys	Gly	Lys	
			260					265					270			
Leu	Leu	Asp	Lys	Ser	Ser	Leu	Asp	Lys	Glu	Tyr	Trp	Asn	Phe	Arg	Ser	
		275					280					285				
Asn	Asp	Ser	Val	Val	Gly	Thr	Ala	Tyr	Asp	Asn	Ala	Val	Pro	Phe	Met	
	290					295					300					
Pro	Asn	Leu	Lys	Ala	Tyr	Pro	Lys	Asn	Thr	Thr	Thr	Ser	Ser	Thr	Asn	
305					310					315					320	
Pro	Asp	Asp	Lys	Ile	Ser	Ala	Gly	Lys	Lys	Asn	Ile	Val	Ser	Asn	Val	
				325				330						335		
Tyr	Leu	Glu	Gly	Arg	Val	Tyr	Gln	Pro	Val	Ala	Leu	Thr	Val	Lys	Phe	
			340					345					350			
Asn	Ser	Glu	Asn	Asp	Cys	Ala	Tyr	Ser	Ile	Thr	Phe	Asp	Phe	Val	Trp	
		355					360					365				
Ser	Lys	Thr	Tyr	Glu	Ser	Pro	Val	Ala	Phe	Asp	Ser	Ser	Ser	Phe	Thr	
	370					375					380					
Phe	Ser	Tyr	Ile	Ala	Gln	Glu										
385					390											

<210> 31  
 <211> 381  
 <212> PRT  
 <213> Human Adenovirus 37 Fiber Protein

<400> 31

Ser	Cys	Ser	Cys	Pro	Ser	Ala	Pro	Thr	Ile	Phe	Met	Leu	Leu	Gln	Met
1				5					10					15	
Lys	Arg	Ala	Arg	Pro	Ser	Glu	Asp	Thr	Phe	Asn	Pro	Val	Tyr	Pro	Tyr
			20					25					30		
Gly	Tyr	Ala	Arg	Asn	Gln	Asn	Ile	Pro	Phe	Leu	Thr	Pro	Pro	Phe	Val
		35					40					45			
Ser	Ser	Asp	Gly	Phe	Lys	Asn	Phe	Pro	Pro	Gly	Val	Leu	Ser	Leu	Lys
	50					55					60				
Leu	Ala	Asp	Pro	Ile	Thr	Ile	Thr	Asn	Gly	Asp	Val	Ser	Leu	Lys	Val
65					70					75					80
Gly	Gly	Gly	Leu	Thr	Leu	Gln	Asp	Gly	Ser	Leu	Thr	Val	Asn	Pro	Lys
				85					90					95	
Ala	Pro	Leu	Gln	Val	Asn	Thr	Asp	Lys	Lys	Leu	Glu	Leu	Ala	Tyr	Asp
			100					105					110		
Asn	Pro	Phe	Glu	Ser	Ser	Ala	Asn	Lys	Leu	Ser	Leu	Val	Gly	His	Gly
		115					120					125			
Leu	Lys	Val	Leu	Asp	Glu	Lys	Ser	Ala	Ala	Gly	Leu	Lys	Asp	Leu	Ile
	130					135					140				
Gly	Lys	Leu	Val	Val	Leu	Thr	Gly	Lys	Gly	Ile	Gly	Thr	Glu	Asn	Leu
145					150					155					160

Glu Asn Thr Asp Gly Ser Ser Arg Gly Ile Gly Ile Asn Val Arg Ala  
 165 170 175  
 Arg Glu Gly Leu Thr Phe Asp Asn Asp Gly Tyr Leu Val Ala Trp Asn  
 180 185 190  
 Pro Lys Tyr Asp Leu Arg Thr Leu Trp Thr Thr Pro Asp Thr Ser Pro  
 195 200 205  
 Asn Cys Thr Ile Ala Gln Asp Lys Asp Ser Lys Leu Thr Leu Val Leu  
 210 215 220  
 Thr Lys Cys Gly Ser Gln Ile Leu Ala Asn Val Ser Leu Ile Val Val  
 225 230 235 240  
 Ala Gly Lys Tyr His Ile Ile Asn Asn Lys Thr Asn Pro Lys Ile Lys  
 245 250 255  
 Ser Phe Thr Ile Lys Leu Leu Phe Asn Lys Phe Asn Gly Val Leu Leu  
 260 265 270  
 Asp Asn Ser Asn Leu Gly Lys Ala Tyr Trp Asn Phe Arg Ser Gly Asn  
 275 280 285  
 Ser Asn Val Ser Thr Ala Tyr Glu Lys Ala Ile Gly Phe Met Pro Asn  
 290 295 300  
 Leu Val Ala Val Ser Lys Pro Ser Asn Ser Lys Lys Tyr Ala Arg Asp  
 305 310 315 320  
 Ile Val Tyr Gly Asn Ile Thr Tyr Leu Gly Gly Lys Pro Asp Gln Pro  
 325 330 335  
 Gly Val Ile Lys Thr Thr Phe Asn Gln Glu Thr Gly Cys Glu Tyr Ser  
 340 345 350  
 Ile Thr Phe Asn Phe Ser Trp Ser Lys Thr Tyr Glu Asn Val Glu Phe  
 355 360 365  
 Glu Thr Thr Ser Phe Thr Phe Ser Tyr Ile Ala Gln Glu  
 370 375 380

<210> 32  
 <211> 391  
 <212> PRT  
 <213> Human Adenovirus 38 Fiber Protein

<220>  
 <221> Xaa  
 <222> (49)..(192)  
 <223> Can be any amino acid

<400> 32

Ser Cys Ser Cys Pro Ser Ala Pro Thr Ile Phe Met Leu Leu Gln Met  
 1 5 10 15  
 Lys Arg Ala Arg Pro Ser Glu Asp Thr Phe Asn Pro Val Tyr Pro Tyr  
 20 25 30  
 Gly Tyr Ala Arg Asn Gln Asn Ile Pro Phe Xaa Thr Pro Pro Phe Val  
 35 40 45



Xaa	Ser	Asp	Gly	Phe	Gln	Asn	Phe	Pro	Pro	Gly	Val	Leu	Ser	Leu	Lys	50	55	60
Leu	Ala	Asp	Pro	Ile	Thr	Ile	Ala	Asn	Gly	Asn	Val	Ser	Leu	Lys	Val	65	70	75
Gly	Gly	Gly	Leu	Thr	Leu	Glu	Gln	Asp	Ser	Gly	Lys	Leu	Ile	Val	Asn	85	90	95
Xaa	Lys	Ala	Pro	Leu	Gln	Val	Ala	Asn	Asp	Lys	Leu	Glu	Leu	Ser	Tyr	100	105	110
Ala	Asp	Pro	Phe	Glu	Thr	Ser	Ala	Asn	Lys	Leu	Ser	Leu	Lys	Val	Gly	115	120	125
His	Gly	Leu	Lys	Val	Leu	Asp	Glu	Lys	Asn	Ala	Gly	Gly	Leu	Lys	Asp	130	135	140
Leu	Ile	Gly	Thr	Leu	Val	Val	Leu	Thr	Gly	Lys	Gly	Ile	Gly	Val	Glu	145	150	155
Glu	Leu	Lys	Asn	Ala	Asp	Asn	Thr	Asn	Arg	Gly	Val	Gly	Ile	Asn	Val	165	170	175
Arg	Leu	Gly	Lys	Asp	Gly	Gly	Leu	Ser	Phe	Asp	Lys	Lys	Gly	Asp	Xaa	180	185	190
Val	Ala	Trp	Asn	Lys	His	Asp	Asp	Arg	Arg	Thr	Leu	Trp	Thr	Thr	Pro	195	200	205
Asp	Pro	Ser	Pro	Asn	Cys	Thr	Ile	Asp	Glu	Glu	Arg	Asp	Ser	Lys	Leu	210	215	220
Thr	Leu	Val	Leu	Thr	Lys	Cys	Gly	Ser	Gln	Ile	Leu	Ala	Asn	Val	Ser	225	230	235
Leu	Leu	Val	Val	Lys	Gly	Lys	Phe	Ser	Asn	Ile	Asn	Asn	Asn	Thr	Asn	245	250	255
Pro	Thr	Asp	Lys	Lys	Ile	Thr	Val	Lys	Leu	Leu	Phe	Asn	Glu	Lys	Gly	260	265	270
Val	Leu	Met	Asp	Ser	Ser	Ser	Leu	Lys	Lys	Glu	Tyr	Trp	Asn	Tyr	Arg	275	280	285
Asn	Asp	Asn	Ser	Thr	Val	Ser	Gln	Ala	Tyr	Asp	Asn	Ala	Val	Pro	Phe	290	295	300
Met	Pro	Asn	Ile	Lys	Ala	Tyr	Pro	Lys	Pro	Thr	Thr	Asp	Thr	Ser	Ala	305	310	315
Lys	Pro	Glu	Asp	Lys	Lys	Ser	Ala	Ala	Lys	Arg	Tyr	Thr	Val	Ser	Asn	325	330	335
Val	Tyr	Ile	Gly	Gly	Leu	Pro	Asp	Lys	Thr	Val	Val	Ile	Thr	Ile	Lys	340	345	350
Leu	Asn	Ala	Glu	Thr	Glu	Ser	Ala	Tyr	Ser	Met	Thr	Phe	Glu	Phe	Thr	355	360	365
Trp	Ala	Lys	Thr	Phe	Glu	Asn	Leu	Gln	Phe	Asp	Ser	Ser	Ser	Phe	Thr	370	375	380
Phe	Ser	Tyr	Ile	Ala	Gln	Glu										385	390	

<210> 33  
 <211> 338  
 <212> PRT  
 <213> Human Adenovirus 39 Fiber Protein

<400> 33

Ile	Arg	Ile	Ser	Pro	Ser	Ser	Leu	Pro	Pro	Leu	Ser	Pro	Pro	Met	Asp	1	5	10	15
Ser	Lys	Thr	Ser	Pro	Leu	Gly	Cys	Tyr	His	Ser	Asn	Trp	Leu	Thr	Gln	20	25	30	
Ser	Pro	Ser	Pro	Met	Gly	Met	Ser	His	Arg	Trp	Glu	Gly	Gly	Ser	Pro	35	40	45	
Trp	Gln	Glu	Gly	Thr	Gly	Asp	Leu	Lys	Val	Asn	Ala	Lys	Ser	Pro	Leu	50	55	60	
Gln	Val	Ala	Thr	Asn	Lys	Gln	Leu	Glu	Ile	Ala	Leu	Ala	Lys	Pro	Phe	65	70	75	
Glu	Glu	Lys	Asp	Gly	Lys	Leu	Ala	Leu	Lys	Ile	Gly	His	Gly	Leu	Ala	85	90	95	
Val	Val	Asp	Glu	Asn	His	Thr	His	Leu	Gln	Ser	Leu	Ile	Gly	Thr	Leu	100	105	110	
Val	Ile	Leu	Thr	Gly	Lys	Gly	Ile	Gly	Thr	Gly	Arg	Ala	Glu	Ser	Gly	115	120	125	
Gly	Thr	Ile	Asp	Val	Arg	Leu	Gly	Ser	Gly	Gly	Gly	Leu	Ser	Phe	Asp	130	135	140	
Lys	Asp	Gly	Asn	Leu	Val	Ala	Trp	Asn	Lys	Asp	Asp	Asp	Arg	Arg	Thr	145	150	155	
Leu	Trp	Thr	Thr	Pro	Asp	Pro	Ser	Pro	Asn	Cys	Lys	Ile	Asp	Gln	Asp	165	170	175	
Lys	Asp	Ser	Lys	Leu	Thr	Phe	Val	Leu	Thr	Lys	Cys	Gly	Ser	Gln	Ile	180	185	190	
Leu	Ala	Asn	Met	Ser	Leu	Leu	Val	Val	Lys	Gly	Lys	Phe	Ser	Met	Ile	195	200	205	
Asn	Asn	Lys	Val	Asn	Gly	Thr	Asp	Asp	Tyr	Lys	Lys	Phe	Thr	Ile	Lys	210	215	220	
Leu	Leu	Phe	Asp	Glu	Lys	Gly	Val	Leu	Leu	Lys	Asp	Ser	Ser	Leu	Asp	225	230	235	
Lys	Glu	Tyr	Trp	Asn	Tyr	Arg	Ser	Asn	Asn	Asn	Asn	Val	Gly	Ser	Ala	245	250	255	
Tyr	Glu	Glu	Ala	Val	Gly	Phe	Met	Pro	Ser	Thr	Thr	Ala	Tyr	Pro	Lys	260	265	270	
Pro	Pro	Thr	Pro	Pro	Thr	Asn	Pro	Thr	Thr	Pro	Leu	Glu	Lys	Ser	Gln	275	280	285	
Ala	Lys	Asn	Lys	Tyr	Val	Ser	Asn	Val	Tyr	Leu	Gly	Gly	Gln	Ala	Gly	290	295	300	

Asn Pro Val Ala Thr Thr Val Ser Phe Asn Lys Glu Thr Gly Cys Thr  
 305 310 315 320

Tyr Ser Ile Thr Phe Asp Phe Ala Trp Asn Lys Thr Tyr Glu Asn Val  
 325 330 335

Gln Cys

<210> 34  
 <211> 378  
 <212> PRT  
 <213> Human Adenovirus 42 Fiber Protein

<220>  
 <221> Xaa  
 <222> (237)..(237)  
 <223> Can be any amino acid

<400> 34

Ser Cys Ser Cys Pro Ser Ala Pro Thr Ile Phe Met Leu Leu Gln Met  
 1 5 10 15

Lys Arg Ala Arg Pro Ser Glu Asp Thr Phe Asn Pro Val Tyr Pro Tyr  
 20 25 30

Gly Tyr Ala Arg Asn Gln Asn Ile Pro Phe Leu Thr Pro Pro Phe Val  
 35 40 45

Ser Ser Asp Gly Phe Lys Asn Phe Pro Pro Gly Val Leu Ser Leu Lys  
 50 55 60

Leu Ala Asn Pro Ile Ala Ile Thr Asn Gly Asp Val Ser Leu Lys Val  
 65 70 75 80

Gly Gly Gly Leu Thr Leu Gln Asp Gly Thr Gly Lys Leu Thr Ile Asp  
 85 90 95

Thr Lys Thr Pro Leu Gln Val Ala Asn Asn Lys Leu Glu Leu Ala Phe  
 100 105 110

Asp Ala Pro Leu Tyr Glu Lys Asn Gly Lys Leu Ala Leu Lys Thr Gly  
 115 120 125

His Gly Leu Ala Val Leu Thr Lys Asp Ile Gly Ile Pro Glu Leu Ile  
 130 135 140

Gly Ser Leu Val Ile Leu Thr Gly Lys Gly Ile Gly Thr Gly Thr Val  
 145 150 155 160

Ala Gly Gly Gly Thr Ile Asp Val Arg Leu Gly Asp Asp Gly Gly Leu  
 165 170 175

Ser Phe Asp Lys Lys Gly Asp Leu Val Ala Trp Asn Lys Lys Asn Asp  
 180 185 190

Arg Arg Thr Leu Trp Thr Thr Pro Asp Pro Ser Pro Asn Cys Arg Val  
 195 200 205

Ser Glu Asp Lys Asp Ser Lys Leu Thr Leu Ile Leu Thr Lys Cys Gly  
 210 215 220

Ser Gln Ile Leu Ala Ser Phe Ser Leu Leu Val Val Xaa Gly Thr Tyr

225		230		235		240
Thr Thr Val Asp	Lys 245	Asn Thr Thr Asn	Lys 250	Gln Phe Ser Ile	Lys 255	Leu
Leu Phe Asp	Ala 260	Asn Gly Lys Leu	Lys 265	Glu Ser Asn Leu	Ser 270	Gln
Tyr Trp Asn	Tyr 275	Arg Ser Asp	Asn 280	Ser Val Val Ser	Thr 285	Pro Tyr Asp
Asn Ala Val	Pro 290	Phe Met Pro	Asn 295	Thr Ala Tyr	Pro 300	Lys Ile Ile Asn
Ser Thr Thr	Asp 305	Pro Glu Asn	Lys 310	Lys Ser Ala	Lys 315	Lys Thr Ile Val
Gly Asn Val	Tyr 325	Leu Glu Gly	Asn 330	Ala Gly Gln	Pro 335	Val Ala Val Ala
Ile Ser Phe	Asn 340	Lys Glu Thr	Thr 345	Ala Asp Tyr	Ser 350	Ile Thr Phe Asp
Phe Ala Trp	Ser 355	Lys Ala Tyr	Glu 360	Thr Pro Val	Pro 365	Phe Asp Thr Ser
Ser Met Thr	Phe 370	Ser Tyr Ile	Ala 375	Gln Glu		

<210> 35  
 <211> 328  
 <212> PRT  
 <213> Human Adenovirus 43 Fiber Protein

<220>  
 <221> Xaa  
 <222> (4)..(233)  
 <223> Can be any amino acid

<400> 35

Asn Ile Pro	Xaa 5	Leu Thr Pro	Pro 10	Phe Val Ser	Ser 15	Asp Gly Phe	Lys
Asn Phe Pro	Pro 20	Gly Val Leu	Ser 25	Leu Lys Leu	Ala 30	Asp Pro Ile	Thr
Ile Thr Asn	Gly 35	Asp Val Ser	Leu 40	Lys Val Gly	Gly 45	Gly Leu Thr	Val
Glu Lys Glu	Ser 50	Gly Asn Leu	Thr 55	Val Asn Pro	Lys 60	Ala Pro Leu	Gln
Val Ala Lys	Gly 65	Gln Leu Glu	Leu 70	Ala Tyr Asp	Ser 75	Pro Phe Asp	Val
Lys Asn Asn	Met 85	Leu Thr Leu	Lys 90	Ala Gly His	Gly 95	Leu Ala Val	Val
Thr Lys Asp	Asn 100	Thr Asp Leu	Gln 105	Pro Leu Met	Gly 110	Thr Leu Val	Val
Leu Thr Gly	Lys 115	Gly Ile Gly	Thr 120	Gly Thr Ser	Ala 125	His Gly Gly	Thr

Ile Asp Val Arg Ile Gly Lys Asn Gly Ser Leu Ala Phe Asp Lys Asp  
 130 135 140  
 Gly Asp Leu Val Ala Trp Asp Lys Glu Asn Asp Arg Arg Thr Leu Trp  
 145 150 155 160  
 Thr Thr Pro Asp Thr Ser Pro Asn Cys Lys Met Ser Glu Ala Lys Asp  
 165 170 175  
 Ser Lys Leu Thr Leu Ile Leu Thr Lys Cys Gly Ser Gln Ile Leu Gly  
 180 185 190  
 Ser Val Ser Leu Leu Ala Val Lys Gly Glu Tyr Gln Asn Met Thr Ala  
 195 200 205  
 Asn Thr Lys Lys Asn Val Lys Ile Thr Leu Leu Phe Asp Ala Asn Gly  
 210 215 220  
 Val Leu Leu Ala Gly Ser Ser Xaa Xaa Lys Glu Tyr Trp Asn Phe Arg  
 225 230 235 240  
 Ser Asn Asp Ser Thr Val Ser Gly Asn Tyr Glu Asn Ala Val Gln Phe  
 245 250 255  
 Met Pro Asn Ile Thr Ala Tyr Lys Pro Thr Asn Ser Lys Ser Tyr Ala  
 260 265 270  
 Arg Ser Val Ile Phe Gly Asn Val Tyr Ile Asp Ala Lys Pro Tyr Asn  
 275 280 285  
 Pro Val Val Ile Lys Ile Ser Phe Asn Gln Glu Thr Gln Asn Asn Cys  
 290 295 300  
 Val Tyr Ser Ile Ser Phe Asp Tyr Thr Leu Ser Lys Asp Tyr Pro Asn  
 305 310 315 320  
 Met Gln Phe Asp Val Thr Leu Ser  
 325

<210> 36  
 <211> 341  
 <212> PRT  
 <213> Human Adenovirus 44 Fiber Protein  
 <400> 36

Asn Ile Pro Phe Leu Thr Pro Pro Phe Val Ser Ser Asp Gly Phe Gln  
 1 5 10 15  
 Asn Phe Pro Pro Gly Val Leu Ser Leu Lys Leu Ala Asp Pro Ile Thr  
 20 25 30  
 Ile Thr Asn Gly Asn Val Ser Leu Lys Val Gly Gly Gly Leu Thr Leu  
 35 40 45  
 Gln Glu Gly Thr Gly Asp Leu Lys Val Asn Ala Lys Ser Pro Leu Gln  
 50 55 60  
 Val Ala Thr Asn Lys Gln Leu Glu Ile Ala Leu Ala Lys Pro Phe Glu  
 65 70 75 80  
 Glu Lys Asp Gly Lys Leu Ala Leu Lys Ile Gly His Gly Leu Ala Val  
 85 90 95

Val Asp Glu Asn His Thr His Leu Gln Ser Leu Ile Gly Thr Leu Val  
 100 105 110  
 Ile Leu Thr Gly Lys Gly Ile Gly Thr Gly Ser Ala Glu Ser Gly Gly  
 115 120 125  
 Thr Ile Asp Val Arg Leu Gly Ser Gly Gly Gly Leu Ser Phe Asp Lys  
 130 135 140  
 Asp Gly Asn Leu Val Ala Trp Asn Lys Asp Asp Arg Arg Thr Leu  
 145 150 155 160  
 Trp Thr Thr Pro Asp Pro Ser Pro Asn Cys Lys Ile Asp Gln Asp Lys  
 165 170 175  
 Asp Ser Lys Leu Thr Phe Val Leu Thr Lys Cys Gly Ser Gln Ile Leu  
 180 185 190  
 Ala Asn Met Ser Leu Leu Val Val Lys Gly Lys Phe Ser Met Ile Asn  
 195 200 205  
 Asn Lys Val Asn Gly Thr Asp Asp Tyr Lys Lys Phe Thr Ile Lys Leu  
 210 215 220  
 Leu Phe Asp Glu Lys Gly Val Leu Leu Lys Asp Ser Ser Leu Asp Lys  
 225 230 235 240  
 Glu Tyr Trp Asn Tyr Arg Ser Asn Asn Asn Val Gly Ser Ala Tyr  
 245 250 255  
 Glu Glu Ala Val Gly Phe Met Pro Ser Thr Thr Ala Tyr Pro Lys Pro  
 260 265 270  
 Pro Thr Pro Pro Thr Asn Pro Thr Thr Pro Leu Glu Lys Ser Gln Ala  
 275 280 285  
 Lys Asn Lys Tyr Val Ser Asn Val Tyr Leu Gly Gly Gln Ala Gly Asn  
 290 295 300  
 Pro Val Ala Thr Thr Val Ser Phe Asn Lys Glu Thr Gly Cys Thr Tyr  
 305 310 315 320  
 Ser Ile Thr Phe Asp Phe Ala Trp Asn Lys Thr Tyr Glu Asn Val Gln  
 325 330 335  
 Phe Asp Ser Ser Phe  
 340

<210> 37  
 <211> 345  
 <212> PRT  
 <213> Human Adenovirus 45 Fiber Protein

<400> 37

Asn Ile Pro Phe Leu Thr Pro Pro Phe Val Ser Ser Asp Gly Phe Gln  
 1 5 10 15  
 Asn Phe Pro Pro Gly Val Leu Ser Leu Lys Leu Ala Asp Pro Ile Ala  
 20 25 30  
 Ile Thr Asn Gly Asp Val Ser Leu Lys Val Gly Gly Gly Leu Thr Val  
 35 40 45  
 Glu Lys Asp Ser Gly Asn Leu Lys Val Asn Pro Lys Ala Pro Leu Gln

50	55	60
Val Thr Thr Asp Lys Gln Leu Glu Ile Ala Leu Ala Tyr Pro Phe Glu 65 70 75 80		
Val Ser Asn Gly Lys Leu Gly Ile Lys Ala Gly His Gly Leu Lys Val 85 90 95		
Ile Asp Lys Ile Ala Gly Leu Glu Gly Leu Ala Gly Thr Leu Val Val 100 105 110		
Leu Thr Gly Lys Gly Ile Gly Thr Glu Asn Leu Glu Asn Ser Asp Gly 115 120 125		
Ser Ser Arg Gly Val Gly Ile Asn Val Arg Leu Ala Lys Asp Gly Val 130 135 140		
Leu Ala Phe Asp Lys Lys Gly Asp Leu Val Ala Trp Asn Lys His Asp 145 150 155 160		
Asp Arg Arg Thr Leu Trp Thr Thr Pro Asp Pro Ser Pro Asn Cys Thr 165 170 175		
Ile Asp Gln Glu Arg Asp Ser Lys Leu Thr Leu Val Leu Thr Lys Cys 180 185 190		
Gly Ser Gln Ile Leu Ala Asn Val Ser Leu Leu Val Val Lys Gly Lys 195 200 205		
Phe Ser Asn Ile Asn Asn Asn Ala Asn Pro Thr Asp Lys Lys Ile Thr 210 215 220		
Val Lys Leu Leu Phe Asn Glu Lys Gly Val Leu Met Asp Ser Ser Thr 225 230 235 240		
Leu Lys Lys Glu Tyr Trp Asn Tyr Arg Asn Asp Asn Ser Thr Val Ser 245 250 255		
Gln Ala Tyr Asp Asn Ala Val Pro Phe Met Pro Asn Ile Lys Ala Tyr 260 265 270		
Pro Lys Pro Ser Thr Asp Thr Ser Ala Lys Pro Glu Asp Lys Lys Ser 275 280 285		
Ala Ala Lys Arg Tyr Ile Val Ser Asn Val Tyr Ile Gly Gly Leu Pro 290 295 300		
Asp Lys Thr Val Val Ile Thr Ile Lys Phe Asn Ala Glu Thr Glu Cys 305 310 315 320		
Ala Tyr Ser Ile Thr Phe Glu Phe Thr Trp Ala Lys Thr Phe Glu Asp 325 330 335		
Val Gln Cys Asp Ser Ser Ser Phe Thr 340 345		

<210> 38  
 <211> 339  
 <212> PRT  
 <213> Human Adenovirus 46 Fiber Protein

<400> 38

Asn Ile Pro Phe Leu Thr Pro Pro Phe Val Ser Ser Asp Gly Phe Lys 1 5 10 15
--

Asn	Phe	Pro	Pro	Gly	Val	Leu	Ser	Leu	Lys	Leu	Ala	Asp	Pro	Ile	Ala
			20					25					30		
Ile	Val	Asn	Gly	Asp	Val	Ser	Leu	Lys	Val	Gly	Gly	Gly	Leu	Thr	Leu
		35					40					45			
Gln	Glu	Gly	Asn	Leu	Thr	Val	Asp	Ala	Lys	Ala	Pro	Leu	Gln	Val	Ala
	50					55					60				
Asn	Asp	Lys	Leu	Glu	Leu	Ser	Tyr	Ala	Asp	Phe	Phe	Glu	Val	Lys	Asp
65					70					75					80
Thr	Lys	Leu	Gln	Leu	Lys	Val	Gly	His	Gly	Leu	Lys	Val	Ile	Asp	Glu
			85						90					95	
Lys	Thr	Ser	Ser	Gly	Leu	Gln	Ser	Leu	Ile	Gly	Asn	Leu	Val	Val	Leu
			100					105					110		
Thr	Gly	Lys	Gly	Ile	Gly	Thr	Gln	Glu	Leu	Lys	Asp	Lys	Asp	Asp	Glu
		115					120					125			
Thr	Lys	Asn	Ile	Gly	Val	Gly	Ile	Asn	Val	Arg	Ile	Gly	Lys	Asn	Glu
	130					135					140				
Ser	Leu	Ala	Phe	Asp	Lys	Asp	Gly	Asn	Leu	Val	Ala	Trp	Asp	Asn	Glu
145					150					155					160
Asn	Asp	Arg	Arg	Thr	Leu	Trp	Thr	Thr	Pro	Asp	Thr	Ser	Ser	Lys	Phe
				165					170					175	
Val	Lys	Ile	Ser	Thr	Glu	Lys	Asp	Ser	Lys	Leu	Thr	Leu	Val	Leu	Thr
			180					185					190		
Lys	Cys	Gly	Ser	Gln	Ile	Leu	Ala	Ser	Val	Ser	Leu	Leu	Ala	Val	Ala
		195					200					205			
Gly	Ser	Tyr	Leu	Asn	Met	Thr	Ala	Ser	Thr	Gln	Lys	Ser	Ile	Lys	Val
	210					215					220				
Ser	Leu	Met	Phe	Asp	Ser	Lys	Gly	Leu	Leu	Met	Thr	Thr	Ser	Ser	Ile
225					230					235					240
Asp	Lys	Gly	Tyr	Trp	Asn	Tyr	Arg	Asn	Lys	Asn	Ser	Val	Val	Gly	Thr
				245					250					255	
Ala	Tyr	Glu	Asn	Ala	Ile	Pro	Phe	Met	Pro	Asn	Leu	Val	Ala	Tyr	Pro
			260					265					270		
Arg	Pro	Asn	Thr	Pro	Asp	Ser	Lys	Ile	Tyr	Ala	Arg	Ser	Lys	Ile	Val
		275					280					285			
Gly	Asn	Val	Tyr	Leu	Ala	Gly	Leu	Ala	Tyr	Gln	Pro	Ile	Val	Ile	Thr
	290					295					300				
Val	Ser	Phe	Asn	Gln	Glu	Lys	Asp	Ala	Ser	Cys	Ala	Tyr	Ser	Ile	Thr
305					310					315					320
Phe	Glu	Phe	Ala	Trp	Asn	Lys	Asp	Tyr	Val	Gly	Gln	Phe	Asp	Thr	Thr
				325					330					335	
Ser	Phe	Thr													



<211> 389  
<212> PRT  
<213> Human Adenovirus 47 Fiber Protein

<400> 39

Ser	Cys	Pro	Ser	Ala	Pro	Thr	Ile	Phe	Met	Leu	Leu	Gln	Met	Lys	Arg
1				5					10					15	
Ala	Arg	Pro	Ser	Glu	Asp	Thr	Phe	Asn	Pro	Val	Tyr	Pro	Tyr	Gly	Tyr
			20					25					30		
Ala	Arg	Asn	Gln	Asn	Ile	Pro	Phe	Leu	Thr	Pro	Pro	Phe	Val	Ser	Ser
		35					40					45			
Asp	Gly	Phe	Lys	Asn	Phe	Pro	Pro	Gly	Val	Leu	Ser	Leu	Lys	Leu	Ala
	50					55					60				
Asp	Pro	Ile	Thr	Ile	Thr	Asn	Gly	Asp	Val	Ser	Leu	Lys	Val	Gly	Gly
65				70					75					80	
Gly	Leu	Thr	Leu	Gln	Glu	Gly	Thr	Gly	Asn	Leu	Thr	Val	Asn	Ala	Lys
				85					90					95	
Ala	Pro	Leu	Gln	Val	Ala	Asp	Asp	Lys	Lys	Leu	Glu	Leu	Ser	Tyr	Asp
			100					105					110		
Asn	Pro	Phe	Glu	Val	Ser	Ala	Asn	Lys	Leu	Ser	Leu	Lys	Val	Gly	His
		115					120					125			
Gly	Leu	Lys	Val	Leu	Asp	Glu	Lys	Asn	Ser	Gly	Gly	Leu	Gln	Glu	Leu
	130					135					140				
Ile	Gly	Lys	Leu	Val	Ile	Leu	Thr	Gly	Lys	Gly	Ile	Gly	Val	Glu	Glu
145					150					155					160
Leu	Lys	Asn	Ala	Asp	Asn	Thr	Asn	Arg	Gly	Val	Gly	Ile	Asn	Val	Arg
				165					170					175	
Leu	Gly	Lys	Asp	Gly	Gly	Leu	Ser	Phe	Asp	Lys	Lys	Gly	Glu	Leu	Val
			180					185					190		
Ala	Trp	Asn	Lys	His	Asn	Asp	Thr	Arg	Thr	Leu	Trp	Thr	Thr	Pro	Asp
		195					200					205			
Pro	Ser	Pro	Asn	Cys	Lys	Ile	Glu	Gln	Asp	Lys	Asp	Ser	Lys	Leu	Thr
	210					215					220				
Leu	Val	Leu	Thr	Lys	Cys	Gly	Ser	Gln	Ile	Leu	Ala	Thr	Met	Ala	Phe
225					230					235					240
Gln	Val	Val	Lys	Asp	Thr	Tyr	Glu	Asn	Ile	Ser	Lys	Asn	Thr	Ala	Lys
				245					250					255	
Lys	Ser	Phe	Ser	Ile	Lys	Leu	Leu	Phe	Asp	Asp	Asn	Gly	Lys	Leu	Leu
			260					265					270		
Glu	Gly	Ser	Ser	Leu	Asp	Lys	Asp	Tyr	Trp	Asn	Phe	Arg	Asn	Asp	Asp
		275					280					285			
Ser	Ile	Met	Pro	Ser	Gln	Tyr	Asp	Asn	Ala	Val	Pro	Phe	Met	Pro	Asn
	290					295					300				
Leu	Lys	Ala	Tyr	Pro	Asn	Pro	Lys	Thr	Ser	Thr	Val	Leu	Pro	Ser	Thr
305					310					315					320

[illegible]

Ser 1	Asp	Ile	Pro	Phe 5	Leu	Thr	Pro	Pro	Phe 10	Val	Ser	Ser	Asp	Gly 15	Phe
Gln	Asn	Phe	Pro 20	Pro	Gly	Val	Leu	Ser 25	Leu	Lys	Leu	Ala	Asp 30	Pro	Ile
Thr	Ile	Thr 35	Asn	Gly	Asn	Val	Ser 40	Leu	Lys	Val	Gly	Gly 45	Gly	Leu	Thr
Leu	Gln 50	Glu	Gly	Thr	Gly	Asp 55	Leu	Lys	Val	Asn	Ala 60	Lys	Ser	Pro	Leu
Gln 65	Val	Ala	Thr	Asn	Lys 70	Gln	Leu	Glu	Ile	Ala 75	Leu	Ala	Lys	Pro	Phe 80
Glu	Glu	Lys	Asp	Gly 85	Lys	Leu	Ala	Leu	Lys 90	Ile	Gly	His	Glu	Leu 95	Ala
Val	Val	Asp	Glu 100	Asn	Leu	Thr	His	Leu 105	Gln	Ser	Leu	Ile	Gly 110	Thr	Leu
Val	Ile	Leu 115	Thr	Gly	Lys	Gly 120	Ile	Gly	Thr	Gly	Arg 125	Ala	Glu	Ser	Gly
Gly	Thr 130	Ile	Asp	Val	Arg	Leu 135	Gly	Ser	Gly	Gly	Gly 140	Leu	Ser	Phe	Asp
Lys 145	Asp	Gly	Asn	Leu	Val 150	Ala	Trp	Asn	Lys	Asp 155	Asp	Asp	Arg	Arg	Thr 160
Leu	Trp	Thr	Thr	Pro 165	Asp	Pro	Ser	Pro	Asn 170	Cys	Lys	Ile	Asp	Gln 175	Asp
Lys	Asp	Ser	Lys 180	Leu	Thr	Phe	Val	Leu 185	Thr	Lys	Cys	Gly	Ser 190	Gln	Ile
Leu	Ala	Asn 195	Met	Ser	Leu	Leu	Val 200	Val	Lys	Gly	Lys	Phe 205	Ser	Met	Ile
Asn	Asn 210	Lys	Val	Asn	Gly	Thr 215	Asp	Asp	Tyr	Lys	Lys 220	Phe	Thr	Ile	Lys

Leu Leu Phe Asp Glu Lys Gly Val Leu Leu Lys Asp Ser Ser Leu Asp  
 225 230 235 240  
 Lys Glu Tyr Trp Asn Tyr Arg Ser Asn Asn Asn Asn Val Gly Ser Ala  
 245 250 255  
 Tyr Glu Glu Ala Val Gly Phe Met Pro Ser Thr Thr Ala Tyr Pro Lys  
 260 265 270  
 Pro Pro Thr Pro Pro Thr Asn Pro Thr Thr Pro Leu Glu Lys Ser Gln  
 275 280 285  
 Ala Lys Asn Lys Tyr Val Ser Asn Val Tyr Leu Gly Gly Gln Ala Gly  
 290 295 300  
 Asn Pro Val Ala Thr Thr Val Ser Phe Asn Lys Glu Thr Gly Cys Thr  
 305 310 315 320  
 Tyr Ser Ile Thr Phe Asp Phe Ala Trp Asn Lys Thr Tyr Lys Met Ala  
 325 330 335  
 Phe Ile Pro Arg Phe Asn Phe  
 340

<210> 41  
 <211> 393  
 <212> PRT  
 <213> Human Adenovirus 49 Fiber Protein

<220>  
 <221> Xaa  
 <222> (262)..(262)  
 <223> Can be any nucleic acid

<400> 41

Ser Cys Ser Cys Pro Ser Ala Pro Thr Ile Phe Met Leu Leu Gln Met  
 1 5 10 15  
 Lys Arg Ala Arg Pro Ser Glu Asp Thr Phe Asn Pro Val Tyr Pro Tyr  
 20 25 30  
 Gly Tyr Ala Arg Asn Gln Asn Ile Pro Phe Leu Thr Pro Pro Phe Val  
 35 40 45  
 Ser Ser Asp Gly Phe Gln Asn Phe Pro Pro Gly Val Leu Ser Leu Lys  
 50 55 60  
 Leu Ala Asp Pro Ile Ala Ile Thr Asn Gly Asn Val Ser Leu Lys Val  
 65 70 75 80  
 Gly Gly Gly Leu Thr Val Glu Gln Asp Ser Gly Asn Leu Lys Val Asn  
 85 90 95  
 Pro Lys Ala Pro Leu Gln Val Ala Thr Asp Asn Gln Leu Glu Ile Ser  
 100 105 110  
 Leu Ala Asp Pro Phe Glu Val Lys Asn Lys Lys Leu Ser Leu Lys Val  
 115 120 125  
 Gly His Gly Leu Lys Val Ile Asp Glu Asn Ile Ser Thr Leu Gln Gly  
 130 135 140  
 Leu Leu Gly Asn Leu Val Val Leu Thr Gly Met Gly Ile Gly Thr Glu

145		150		155		160									
Glu	Leu	Lys	Lys	Asp 165	Asp	Lys	Ile	Val	Gly 170	Ser	Ala	Val	Asn	Val	Arg 175
Leu	Gly	Gln	Asp 180	Gly	Gly	Leu	Thr	Phe 185	Asp	Lys	Lys	Gly	Asp 190	Leu	Val
Ala	Trp	Asn 195	Lys	Glu	Asn	Asp	Arg 200	Arg	Thr	Leu	Trp	Thr 205	Thr	Pro	Asp
Pro	Ser 210	Pro	Asn	Cys	Lys	Val 215	Ser	Glu	Glu	Lys	Asp 220	Ser	Lys	Leu	Thr
Leu	Val	Leu	Thr	Lys	Cys 230	Gly	Ser	Gln	Ile	Leu 235	Ala	Ser	Val	Ser	Leu 240
Leu	Val	Val	Lys	Gly 245	Lys	Phe	Ala	Asn	Ile 250	Asn	Asn	Lys	Thr	Asn 255	Pro
Gly	Glu	Asp	Tyr 260	Lys	Xaa	Phe	Ser	Val 265	Lys	Leu	Leu	Phe	Asp 270	Ala	Asn
Gly	Lys	Leu 275	Leu	Thr	Gly	Ser	Ser 280	Leu	Asp	Gly	Asn	Tyr 285	Trp	Asn	Tyr
Lys	Asn 290	Lys	Asp	Ser	Val	Ile 295	Gly	Ser	Pro	Tyr	Glu 300	Asn	Ala	Val	Pro
Phe	Met	Pro	Asn	Ser	Thr 310	Ala	Tyr	Pro	Lys	Ile 315	Ile	Asn	Gly	Thr	Ala 320
Asn	Pro	Glu	Asp	Lys 325	Lys	Ser	Ala	Ala	Lys 330	Lys	Thr	Ile	Val	Thr 335	Asn
Val	Tyr	Leu	Gly 340	Gly	Asp	Ala	Ala	Lys 345	Pro	Val	Ala	Thr	Thr 350	Ile	Ser
Phe	Asn	Lys 355	Glu	Thr	Glu	Ser	Asn 360	Cys	Val	Tyr	Ser	Ile 365	Thr	Phe	Asp
Phe	Ala 370	Trp	Asn	Lys	Thr	Trp 375	Lys	Asn	Val	Pro	Phe 380	Asp	Ser	Ser	Ser
Leu	Thr	Phe	Ser	Tyr	Ile 390	Ala	Gln	Glu							

<210> 42

<211> 353

<212> PRT

<213> Human Adenovirus 52 Fiber Protein

<400> 42

Ser	Cys	Ser	Cys	Pro	Ser	Ala	Pro	Thr	Ile	Phe	Met	Leu	Leu	Gln	Met
1				5					10					15	
Lys	Arg	Ala	Arg	Pro	Ser	Glu	Asp	Thr	Phe	Asn	Pro	Val	Tyr	Pro	Tyr
			20					25					30		
Glu	Asp	Glu	Ser	Thr	Ser	Gln	His	Pro	Phe	Ile	Asn	Pro	Gly	Phe	Ile
		35					40					45			
Ser	Pro	Asn	Gly	Phe	Thr	Gln	Ser	Pro	Asp	Gly	Val	Leu	Thr	Leu	Asn
	50					55					60				

Cys	Leu	Thr	Pro	Leu	Thr	Thr	Thr	Gly	Gly	Pro	Leu	Gln	Leu	Lys	Val	65	70	75	80
Gly	Gly	Gly	Leu	Ile	Val	Asp	Asp	Thr	Asp	Gly	Thr	Leu	Gln	Glu	Asn	85	90	95	
Ile	Arg	Val	Thr	Ala	Pro	Ile	Thr	Lys	Asn	Asn	His	Ser	Val	Glu	Leu	100	105	110	
Ser	Ile	Gly	Asn	Gly	Leu	Glu	Thr	Gln	Asn	Asn	Lys	Leu	Cys	Ala	Lys	115	120	125	
Leu	Gly	Asn	Gly	Leu	Lys	Phe	Asn	Asn	Gly	Asp	Ile	Cys	Ile	Lys	Asp	130	135	140	
Ser	Ile	Asn	Thr	Leu	Trp	Thr	Gly	Ile	Lys	Pro	Pro	Pro	Asn	Cys	Gln	145	150	155	160
Ile	Val	Glu	Asn	Thr	Asp	Thr	Asn	Asp	Gly	Lys	Leu	Thr	Leu	Val	Leu	165	170	175	
Val	Lys	Asn	Gly	Gly	Leu	Val	Asn	Gly	Tyr	Val	Ser	Leu	Val	Gly	Val	180	185	190	
Ser	Asp	Thr	Val	Asn	Gln	Met	Phe	Thr	Gln	Lys	Ser	Ala	Thr	Ile	Gln	195	200	205	
Leu	Arg	Leu	Tyr	Phe	Asp	Ser	Ser	Gly	Asn	Leu	Leu	Thr	Asp	Glu	Ser	210	215	220	
Asn	Leu	Lys	Ile	Pro	Leu	Lys	Asn	Lys	Ser	Ser	Thr	Ala	Thr	Ser	Glu	225	230	235	240
Ala	Ala	Thr	Ser	Ser	Lys	Ala	Phe	Met	Pro	Ser	Thr	Thr	Ala	Tyr	Pro	245	250	255	
Phe	Asn	Thr	Thr	Thr	Arg	Asp	Ser	Glu	Asn	Tyr	Ile	His	Gly	Ile	Cys	260	265	270	
Tyr	Tyr	Met	Thr	Ser	Tyr	Asp	Arg	Ser	Leu	Val	Pro	Leu	Asn	Ile	Ser	275	280	285	
Ile	Met	Leu	Asn	Ser	Arg	Thr	Ile	Ser	Ser	Asn	Val	Ala	Tyr	Ala	Ile	290	295	300	
Gln	Phe	Glu	Trp	Asn	Leu	Asn	Ala	Lys	Glu	Ser	Pro	Glu	Ser	Asn	Ile	305	310	315	320
Ala	Thr	Leu	Thr	Thr	Ser	Pro	Phe	Phe	Phe	Ser	Tyr	Ile	Ile	Glu	Asp	325	330	335	
Thr	Thr	Lys	Cys	Ile	Ser	Leu	Cys	Tyr	Val	Ser	Thr	Cys	Leu	Phe	Phe	340	345	350	

Asn

<210> 43  
 <211> 958  
 <212> PRT  
 <213> Human Adenovirus 34 Hexon Protein  
 <400> 43

Leu	Ser	Arg	Arg	Ala	Pro	Gly	Phe	Pro	Leu	Val	Lys	Met	Ala	Thr	Pro	1	5	10	15
Ser	Met	Leu	Pro	Gln	Trp	Ala	Tyr	Met	His	Ile	Ala	Gly	Gln	Asp	Ala	20	25	30	
Ser	Glu	Tyr	Leu	Ser	Pro	Gly	Leu	Val	Gln	Phe	Ala	Arg	Ala	Thr	Asp	35	40	45	
Thr	Tyr	Val	Asn	Leu	Gly	Asn	Lys	Phe	Arg	Asn	Pro	Thr	Val	Ala	Pro	50	55	60	
Thr	His	Asp	Val	Thr	Thr	Asp	Arg	Ser	Gln	Arg	Leu	Met	Leu	Arg	Phe	65	70	75	80
Val	Pro	Val	Asp	Arg	Glu	Asp	Asn	Thr	Tyr	Ser	Tyr	Lys	Val	Arg	Tyr	85	90	95	
Thr	Leu	Ala	Val	Gly	Asp	Asn	Arg	Val	Leu	Asp	Met	Ala	Ser	Thr	Phe	100	105	110	
Phe	Asp	Ile	Arg	Gly	Val	Leu	Asp	Arg	Gly	Pro	Ser	Phe	Lys	Pro	Tyr	115	120	125	
Ser	Gly	Thr	Ala	Tyr	Asn	Ser	Leu	Ala	Pro	Lys	Gly	Ala	Pro	Asn	Ala	130	135	140	
Ser	Gln	Trp	Leu	Asp	Lys	Gly	Val	Thr	Ser	Thr	Gly	Leu	Val	Asp	Asp	145	150	155	160
Gly	Asn	Thr	Thr	Asp	Asp	Gly	Glu	Glu	Ala	Lys	Lys	Ala	Thr	Tyr	Thr	165	170	175	
Phe	Gly	Asn	Ala	Pro	Val	Lys	Ala	Glu	Ala	Glu	Ile	Thr	Lys	Asp	Gly	180	185	190	
Leu	Pro	Val	Gly	Leu	Glu	Val	Ser	Thr	Glu	Gly	Pro	Lys	Pro	Ile	Tyr	195	200	205	
Ala	Asp	Lys	Leu	Tyr	Gln	Pro	Glu	Pro	Gln	Val	Gly	Asp	Glu	Thr	Trp	210	215	220	
Thr	Asp	Leu	Asp	Gly	Lys	Thr	Glu	Glu	Tyr	Gly	Gly	Arg	Val	Leu	Lys	225	230	235	240
Pro	Glu	Thr	Lys	Met	Lys	Pro	Cys	Tyr	Gly	Ser	Phe	Ala	Lys	Pro	Thr	245	250	255	
Asn	Ile	Lys	Gly	Gly	Gln	Ala	Lys	Val	Lys	Pro	Lys	Glu	Asp	Asp	Gly	260	265	270	
Thr	Asn	Asn	Ile	Glu	Tyr	Asp	Ile	Asp	Met	Asn	Phe	Phe	Asp	Leu	Arg	275	280	285	
Ser	Gln	Arg	Ser	Glu	Leu	Lys	Pro	Lys	Ile	Val	Met	Tyr	Ala	Glu	Asn	290	295	300	
Val	Asp	Leu	Glu	Cys	Pro	Asp	Thr	His	Val	Val	Tyr	Lys	Pro	Gly	Val	305	310	315	320
Ser	Asp	Ala	Ser	Ser	Glu	Thr	Asn	Leu	Gly	Gln	Gln	Ser	Met	Pro	Asn	325	330	335	
Arg	Pro	Asn	Tyr	Ile	Gly	Phe	Arg	Asp	Asn	Phe	Ile	Gly	Leu	Met	Tyr	340	345	350	

Tyr	Asn	Ser	Thr	Gly	Asn	Met	Gly	Val	Leu	Ala	Gly	Gln	Ala	Ser	Gln
	355						360					365			
Leu	Asn	Ala	Val	Val	Asp	Leu	Gln	Asp	Arg	Asn	Thr	Glu	Leu	Ser	Tyr
	370					375					380				
Gln	Leu	Leu	Asp	Ser	Leu	Gly	Asp	Arg	Thr	Arg	Tyr	Phe	Ser	Met	Trp
385					390					395					400
Asn	Gln	Ala	Val	Asp	Ser	Tyr	Asp	Pro	Asp	Val	Arg	Val	Ile	Glu	Asn
				405					410					415	
His	Gly	Val	Glu	Asp	Glu	Leu	Pro	Asn	Tyr	Cys	Phe	Pro	Leu	Asp	Gly
			420					425					430		
Val	Gly	Pro	Arg	Thr	Asp	Ser	Tyr	Lys	Glu	Ile	Lys	Pro	Asn	Gly	Asp
		435					440					445			
Gln	Ser	Thr	Trp	Thr	Asn	Val	Asp	Pro	Thr	Gly	Ser	Ser	Glu	Leu	Ala
	450					455					460				
Lys	Gly	Asn	Pro	Phe	Ala	Met	Glu	Ile	Asn	Leu	Gln	Ala	Asn	Leu	Trp
465					470					475					480
Arg	Ser	Phe	Leu	Tyr	Ser	Asn	Val	Ala	Leu	Tyr	Leu	Pro	Asp	Ser	Tyr
				485					490					495	
Lys	Tyr	Thr	Pro	Ser	Asn	Val	Thr	Leu	Pro	Glu	Asn	Lys	Asn	Thr	Tyr
			500					505					510		
Asp	Tyr	Met	Asn	Gly	Arg	Val	Val	Pro	Pro	Ser	Leu	Val	Asp	Thr	Tyr
		515					520					525			
Val	Asn	Ile	Gly	Ala	Arg	Trp	Ser	Leu	Asp	Ala	Met	Asp	Asn	Val	Asn
	530					535					540				
Pro	Phe	Asn	His	His	Arg	Asn	Ala	Gly	Leu	Arg	Tyr	Arg	Ser	Met	Leu
545					550					555					560
Leu	Gly	Asn	Gly	Arg	Tyr	Val	Pro	Phe	His	Ile	Gln	Val	Pro	Gln	Lys
				565					570					575	
Phe	Phe	Ala	Val	Lys	Asn	Leu	Leu	Leu	Leu	Pro	Gly	Ser	Tyr	Thr	Tyr
			580					585					590		
Glu	Trp	Asn	Phe	Arg	Lys	Asp	Val	Asn	Met	Val	Leu	Gln	Ser	Ser	Leu
		595					600					605			
Gly	Asn	Asp	Leu	Arg	Val	Asp	Gly	Ala	Ser	Ile	Ser	Phe	Thr	Ser	Ile
	610					615					620				
Asn	Leu	Tyr	Ala	Thr	Phe	Phe	Pro	Met	Ala	His	Asn	Thr	Ala	Ser	Thr
625					630					635					640
Leu	Glu	Ala	Met	Leu	Arg	Asn	Asp	Thr	Asn	Asp	Gln	Ser	Phe	Asn	Asp
				645					650					655	
Tyr	Leu	Ser	Ala	Ala	Asn	Met	Leu	Tyr	Pro	Ile	Pro	Ala	Asn	Ala	Thr
			660					665					670		
Asn	Ile	Pro	Ile	Ser	Ile	Pro	Ser	Arg	Asn	Trp	Ala	Ala	Phe	Arg	Gly
	675						680					685			
Trp	Ser	Phe	Thr	Arg	Leu	Lys	Thr	Lys	Glu	Thr	Pro	Ser	Leu	Gly	Ser

690					695					700					
Gly 705	Phe	Asp	Pro	Tyr	Phe 710	Val	Tyr	Ser	Gly	Ser 715	Ile	Pro	Leu	Asp	Gly 720
Thr	Phe	Tyr	Leu	Asn 725	His	Thr	Phe	Lys	Lys 730	Val	Ser	Ile	Met	Phe	Asp 735
Ser	Ser	Val	Ser 740	Trp	Pro	Gly	Asn	Asp 745	Arg	Leu	Leu	Ser	Pro	Asn	Glu 750
Phe	Glu	Ile	Lys 755	Arg	Thr	Val	Asp	Gly 760	Glu	Gly	Tyr	Asn	Val	Ala	Gln 765
Cys	Asn	Met	Thr	Asp	Trp	Phe	Leu	Val	Gln	Met	Leu	Ala	Asn	Tyr	Asn 780
Ile 785	Gly	Tyr	Gln	Gly	Phe	Tyr	Ile	Pro	Glu	Gly 795	Tyr	Lys	Asp	Arg	Met 800
Tyr	Ser	Phe	Phe	Arg 805	Asn	Phe	Gln	Pro	Met	Ser 810	Arg	Gln	Val	Val	Asp 815
Glu	Val	Asn	Lys 820	Tyr	Asp	Phe	Lys	Ala	Val	Ile	Pro	Tyr	Gln	His	Asn 830
Asn	Ser	Gly	Phe	Val	Gly	Tyr	Met	Ala	Pro	Thr	Met	Arg	Gln	Gly	Gln 845
Tyr	Pro	Ala	Asn	Tyr	Pro	Tyr	Pro	Leu	Ile	Gly	Thr	Thr	Ala	Val	Asn 860
Ser 865	Val	Thr	Gln	Lys	Lys	Phe	Leu	Cys	Asp	Arg 875	Thr	Met	Trp	Arg	Ile 880
Pro	Phe	Ser	Ser	Asn	Phe	Met	Ser	Met	Gly	Ala 890	Leu	Thr	Asp	Leu	Gly 895
Gln	Asn	Met	Leu	Tyr	Ala	Asn	Ser	Ala	His	Ala	Leu	Asp	Met	Thr	Phe 910
Glu	Val	Asp	Pro	Met	Asp	Glu	Pro	Thr	Leu	Leu	Tyr	Leu	Leu	Phe	Glu 925
Val	Phe	Asp	Val	Val	Arg	Val	Gln	Pro	His	Arg	Gly	Ile	Ile	Glu	Ala 940
Val 945	Tyr	Leu	Arg	Thr	Pro	Phe	Ser	Ala	Gly	Asn 955	Ala	Thr	Thr		

<210> 44  
 <211> 946  
 <212> PRT  
 <213> Human Adenovirus 35 Hexon Protein

<400> 44

Leu 1	Ser	Arg	Arg	Ala 5	Pro	Gly	Phe	Pro	Leu	Val	Lys	Met	Ala	Thr	Pro 15
Ser	Met	Leu	Pro	Gln	Trp	Ala	Tyr	Met	His	Ile	Ala	Gly	Gln	Asp	Ala 30
Ser	Glu	Tyr	Leu	Ser	Pro	Gly	Leu	Val	Gln	Phe	Ala	Arg	Ala	Thr	Asp 45



Thr Tyr Phe Asn Leu Gly Asn Lys Phe Arg Asn Pro Thr Val Ala Pro  
 50 55 60  
 Thr His Asp Val Thr Thr Asp Arg Ser Gln Arg Leu Met Leu Arg Phe  
 65 70 75 80  
 Val Pro Val Asp Arg Glu Asp Asn Thr Tyr Ser Tyr Lys Val Arg Tyr  
 85 90 95  
 Thr Leu Ala Val Gly Asp Asn Arg Val Leu Asp Met Ala Ser Thr Phe  
 100 105 110  
 Phe Asp Ile Arg Gly Val Leu Asp Arg Gly Pro Ser Phe Lys Pro Tyr  
 115 120 125  
 Ser Gly Thr Ala Tyr Asn Ser Leu Ala Pro Lys Gly Ala Pro Asn Ala  
 130 135 140  
 Ser Gln Trp Leu Asp Lys Gly Val Thr Ser Thr Gly Leu Val Asp Asp  
 145 150 155 160  
 Gly Asn Thr Asp Asp Gly Glu Glu Ala Lys Lys Ala Thr Tyr Thr Phe  
 165 170 175  
 Gly Asn Ala Pro Val Lys Ala Glu Ala Glu Ile Thr Lys Asp Gly Leu  
 180 185 190  
 Pro Val Gly Leu Glu Val Ser Thr Glu Gly Pro Lys Pro Ile Tyr Ala  
 195 200 205  
 Asp Lys Leu Tyr Gln Pro Glu Pro Gln Val Gly Asp Thr Trp Thr Asp  
 210 215 220  
 Leu Asp Gly Lys Thr Glu Glu Tyr Gly Gly Arg Val Leu Lys Pro Glu  
 225 230 235 240  
 Thr Lys Met Lys Pro Cys Tyr Gly Ser Phe Ala Lys Pro Thr Asn Ile  
 245 250 255  
 Lys Gly Gly Gln Ala Lys Val Lys Pro Lys Glu Asp Asp Gly Thr Asn  
 260 265 270  
 Asn Ile Tyr Asp Ile Asp Met Asn Phe Phe Asp Leu Arg Ser Gln Arg  
 275 280 285  
 Ser Glu Leu Lys Pro Lys Ile Val Met Tyr Ala Glu Asn Val Asp Leu  
 290 295 300  
 Glu Cys Pro Asp Thr His Val Val Tyr Lys Pro Gly Val Ser Asp Ala  
 305 310 315 320  
 Ser Ser Glu Thr Asn Leu Gly Gln Gln Met Pro Asn Arg Pro Asn Tyr  
 325 330 335  
 Ile Gly Phe Arg Asp Asn Phe Ile Gly Leu Met Tyr Tyr Asn Ser Thr  
 340 345 350  
 Gly Asn Met Gly Val Leu Ala Gly Gln Ala Ser Gln Leu Asn Ala Val  
 355 360 365  
 Val Asp Leu Gln Asp Arg Asn Thr Glu Leu Ser Tyr Gln Leu Leu Leu  
 370 375 380  
 Ser Leu Gly Asp Arg Thr Arg Tyr Phe Ser Met Trp Asn Gln Ala Val

385				390					395					400		
Asp	Ser	Tyr	Asp	Pro 405	Asp	Val	Arg	Val	Ile 410	Glu	Asn	His	Gly	Val 415	Glu	
Asp	Glu	Leu	Pro 420	Asn	Tyr	Cys	Phe	Pro 425	Leu	Asp	Gly	Val	Gly 430	Pro	Arg	
Thr	Asp	Ser 435	Tyr	Lys	Glu	Ile	Pro 440	Asn	Gly	Asp	Gln	Ser 445	Thr	Trp	Thr	
Asn	Val 450	Asp	Pro	Thr	Gly	Ser 455	Ser	Glu	Leu	Ala	Lys 460	Gly	Asn	Pro	Phe	
Ala 465	Met	Glu	Ile	Asn	Leu 470	Gln	Ala	Asn	Leu	Trp 475	Arg	Ser	Phe	Leu	Tyr 480	
Ser	Asn	Val	Ala 485	Leu	Tyr	Leu	Pro	Asp	Ser 490	Tyr	Lys	Tyr	Thr	Ser 495	Asn	
Val	Thr	Leu	Pro 500	Glu	Asn	Lys	Asn	Thr 505	Tyr	Asp	Tyr	Met	Asn 510	Gly	Arg	
Val	Val	Pro 515	Pro	Ser	Leu	Val	Asp 520	Thr	Tyr	Val	Asn	Ile 525	Gly	Ala	Arg	
Trp	Ser 530	Leu	Asp	Ala	Met	Asp 535	Asn	Val	Asn	Pro	Phe 540	Asn	His	His	Arg	
Asn 545	Ala	Gly	Arg	Tyr	Arg 550	Ser	Met	Leu	Leu	Gly 555	Asn	Gly	Arg	Tyr	Val 560	
Pro	Phe	His	Ile	Gln 565	Val	Pro	Gln	Lys	Phe 570	Phe	Ala	Val	Lys	Asn 575	Leu	
Leu	Leu	Leu	Pro 580	Gly	Ser	Tyr	Thr	Tyr 585	Glu	Trp	Asn	Phe	Arg 590	Lys	Asp	
Val	Asn	Met 595	Val	Leu	Gln	Ser	Ser 600	Leu	Asp	Leu	Arg	Val 605	Asp	Gly	Ala	
Ser	Ile 610	Ser	Phe	Thr	Ser	Ile 615	Asn	Leu	Tyr	Ala	Thr 620	Phe	Phe	Pro	Met	
Ala 625	His	Asn	Thr	Ala	Ser 630	Thr	Leu	Glu	Ala	Met 635	Leu	Arg	Asn	Asp	Thr 640	
Asn	Asp	Gln	Ser	Phe 645	Asn	Asp	Tyr	Leu	Ser 650	Ala	Ala	Asn	Met	Leu 655	Tyr	
Pro	Ile	Ala	Asn 660	Ala	Thr	Asn	Ile	Pro 665	Ile	Ser	Ile	Pro	Ser 670	Arg	Asn	
Trp	Ala	Ala 675	Phe	Arg	Gly	Trp	Phe 680	Thr	Arg	Leu	Lys	Thr 685	Lys	Glu	Thr	
Pro	Ser 690	Leu	Gly	Ser	Gly	Phe 695	Asp	Pro	Tyr	Phe	Val 700	Tyr	Ser	Gly	Ser	
Ile 705	Pro	Tyr	Leu	Asp	Gly 710	Thr	Phe	Tyr	Leu	His 715	Thr	His	Lys	Lys	Val 720	
Ser	Ile	Met	Phe	Asp 725	Ser	Ser	Val	Ser	Trp 730	Pro	Gly	Asn	Asp	Arg 735	Leu	

Leu Ser Pro Asn Glu Phe Glu Ile Lys Arg Thr Val Asp Gly Glu Gly  
 740 745 750  
 Tyr Asn Val Ala Gln Cys Asn Met Thr Lys Asp Trp Phe Leu Val Trp  
 755 760 765  
 Leu Ala Asn Tyr Asn Ile Gly Tyr Gln Gly Phe Tyr Ile Pro Glu Gly  
 770 775 780  
 Tyr Lys Asp Arg Met Tyr Ser Phe Phe Arg Asn Phe Gln Pro Met Ser  
 785 790 795 800  
 Arg Gln Val Val Asp Glu Val Asn Tyr Lys Asp Phe Lys Ala Val Ala  
 805 810 815  
 Ile Pro Tyr Gln His Asn Asn Gly Phe Val Gly Tyr Met Ala Pro Thr  
 820 825 830  
 Met Arg Gln Gly Gln Pro Tyr Pro Ala Asn Tyr Pro Tyr Pro Leu Ile  
 835 840 845  
 Gly Thr Thr Ala Val Asn Ser Val Thr Gln Lys Lys Phe Leu Cys Asp  
 850 855 860  
 Arg Thr Met Trp Arg Ile Pro Phe Ser Ser Asn Phe Met Ser Ala Leu  
 865 870 875 880  
 Thr Asp Leu Gly Gln Asn Met Leu Tyr Ala Asn Ser Ala His Ala Leu  
 885 890 895  
 Asp Met Thr Phe Glu Val Asp Pro Met Asp Glu Pro Thr Leu Leu Tyr  
 900 905 910  
 Leu Leu Phe Glu Val Phe Asp Val Val Arg Val His Gln Pro His Arg  
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 Thr Thr  
 945

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 <212> PRT  
 <213> Human Adenovirus 36 Hexon Protein

<400> 45

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 Ser Met Leu Pro Gln Trp Ala Tyr Met His Ile Ala Gly Gln Asp Ala  
 20 25 30  
 Ser Glu Tyr Leu Ser Pro Gly Leu Val Gln Phe Ala Arg Ala Thr Asp  
 35 40 45  
 Thr Tyr Phe Asn Leu Gly Asn Lys Phe Arg Asn Pro Thr Val Ala Pro  
 50 55 60  
 Thr His Asp Val Thr Thr Asp Arg Ser Gln Arg Leu Met Leu Arg Phe  
 65 70 75 80  
 Val Pro Val Asp Arg Glu Asp Asn Thr Tyr Ser Tyr Lys Val Arg Tyr

85								90				95			
Thr	Leu	Ala	Val	Gly	Asp	Asn	Arg	Val	Leu	Asp	Met	Ala	Ser	Thr	Phe
			100					105					110		
Phe	Asp	Ile	Arg	Gly	Val	Leu	Asp	Arg	Gly	Pro	Ser	Phe	Lys	Pro	Tyr
		115					120					125			
Ser	Gly	Thr	Ala	Tyr	Asn	Ser	Leu	Ala	Pro	Lys	Gly	Ala	Pro	Asn	Ala
	130					135					140				
Ser	Gln	Trp	Leu	Asp	Lys	Gly	Val	Thr	Ser	Thr	Gly	Leu	Val	Asp	Asp
145					150					155					160
Gly	Asn	Thr	Asp	Asp	Gly	Glu	Glu	Ala	Lys	Lys	Ala	Thr	Tyr	Thr	Phe
				165				170						175	
Gly	Asn	Ala	Pro	Val	Lys	Ala	Glu	Ala	Glu	Ile	Thr	Lys	Asp	Gly	Leu
			180					185					190		
Pro	Val	Gly	Leu	Glu	Val	Ser	Thr	Glu	Gly	Pro	Lys	Pro	Ile	Tyr	Ala
		195					200					205			
Asp	Lys	Leu	Tyr	Gln	Pro	Glu	Pro	Gln	Val	Gly	Asp	Thr	Trp	Thr	Asp
	210					215					220				
Leu	Asp	Gly	Lys	Thr	Glu	Glu	Tyr	Gly	Gly	Arg	Val	Leu	Lys	Pro	Glu
225					230					235					240
Thr	Lys	Met	Lys	Pro	Cys	Tyr	Gly	Ser	Phe	Ala	Lys	Pro	Thr	Asn	Ile
				245					250					255	
Lys	Gly	Gly	Gln	Ala	Lys	Val	Lys	Pro	Lys	Glu	Asp	Asp	Gly	Thr	Asn
			260					265					270		
Asn	Ile	Tyr	Asp	Ile	Asp	Met	Asn	Phe	Phe	Asp	Leu	Arg	Ser	Gln	Arg
		275					280					285			
Ser	Glu	Leu	Lys	Pro	Lys	Ile	Val	Met	Tyr	Ala	Glu	Asn	Val	Asp	Leu
	290					295					300				
Glu	Cys	Pro	Asp	Thr	His	Val	Val	Tyr	Lys	Pro	Gly	Val	Ser	Asp	Ala
305					310					315					320
Ser	Ser	Glu	Thr	Asn	Leu	Gly	Gln	Gln	Ser	Met	Pro	Asn	Arg	Pro	Asn
				325					330					335	
Tyr	Ile	Gly	Phe	Arg	Asp	Asn	Phe	Ile	Gly	Leu	Met	Tyr	Tyr	Asn	Ser
			340				345						350		
Thr	Gly	Asn	Met	Gly	Val	Leu	Ala	Gly	Gln	Ala	Ser	Gln	Leu	Asn	Ala
		355					360						365		
Val	Val	Asp	Leu	Gln	Asp	Arg	Asn	Thr	Glu	Leu	Ser	Tyr	Gln	Leu	Leu
		370				375					380				
Asp	Ser	Leu	Gly	Asp	Arg	Thr	Arg	Tyr	Phe	Ser	Met	Trp	Asn	Gln	Ala
385					390					395					400
Val	Asp	Ser	Tyr	Asp	Pro	Asp	Val	Arg	Val	Ile	Glu	Asn	His	Gly	Val
				405					410				415		
Glu	Asp	Glu	Leu	Pro	Asn	Tyr	Cys	Phe	Pro	Leu	Asp	Gly	Val	Gly	Pro
			420					425					430		

Arg	Thr	Asp	Ser	Tyr	Lys	Ile	Lys	Pro	Asn	Gly	Asp	Gln	Ser	Thr	Trp	435	440	445
Thr	Asn	Val	Asp	Pro	Thr	Gly	Ser	Ser	Glu	Leu	Ala	Lys	Gly	Asn	Pro	450	455	460
Phe	Ala	Met	Glu	Ile	Asn	Leu	Gln	Ala	Asn	Leu	Trp	Arg	Ser	Phe	Leu	465	470	475
Tyr	Ser	Asn	Val	Ala	Leu	Tyr	Leu	Pro	Asp	Ser	Tyr	Lys	Tyr	Thr	Pro	485	490	495
Ser	Asn	Val	Thr	Leu	Pro	Glu	Asn	Lys	Asn	Thr	Tyr	Asp	Tyr	Met	Asn	500	505	510
Gly	Arg	Val	Val	Pro	Pro	Ser	Leu	Val	Asp	Thr	Tyr	Val	Asn	Ile	Gly	515	520	525
Ala	Arg	Trp	Ser	Leu	Asp	Ala	Met	Asp	Asn	Val	Asn	Pro	Phe	Asn	His	530	535	540
His	Arg	Ala	Gly	Leu	Arg	Tyr	Arg	Ser	Met	Leu	Leu	Gly	Asn	Gly	Arg	545	550	555
Tyr	Val	Pro	Phe	His	Ile	Gln	Val	Pro	Gln	Lys	Phe	Phe	Ala	Val	Lys	565	570	575
Asn	Leu	Leu	Leu	Leu	Pro	Gly	Ser	Tyr	Thr	Tyr	Glu	Trp	Asn	Phe	Arg	580	585	590
Lys	Asp	Val	Asn	Met	Val	Leu	Gln	Ser	Leu	Gly	Asn	Asp	Leu	Arg	Val	595	600	605
Asp	Gly	Ala	Ser	Ile	Ser	Phe	Thr	Ser	Ile	Asn	Leu	Tyr	Ala	Thr	Phe	610	615	620
Phe	Pro	Met	Ala	His	Asn	Thr	Ala	Ser	Thr	Leu	Glu	Ala	Met	Leu	Arg	625	630	635
Asn	Asp	Thr	Asn	Asp	Gln	Ser	Phe	Asn	Asp	Tyr	Leu	Ser	Ala	Ala	Asn	645	650	655
Met	Leu	Tyr	Pro	Ile	Pro	Ala	Asn	Ala	Thr	Asn	Ile	Pro	Ile	Ser	Ile	660	665	670
Pro	Ser	Arg	Asn	Trp	Ala	Ala	Phe	Arg	Gly	Trp	Ser	Phe	Thr	Arg	Leu	675	680	685
Lys	Thr	Lys	Glu	Thr	Pro	Ser	Leu	Gly	Ser	Gly	Phe	Asp	Pro	Tyr	Phe	690	695	700
Val	Tyr	Ser	Gly	Ser	Ile	Pro	Tyr	Asp	Gly	Thr	Phe	Tyr	Leu	Asn	His	705	710	715
Thr	Phe	Lys	Lys	Val	Ser	Ile	Met	Phe	Asp	Ser	Ser	Val	Ser	Trp	Pro	725	730	735
Gly	Asn	Asp	Arg	Leu	Leu	Ser	Pro	Asn	Glu	Phe	Glu	Ile	Lys	Arg	Thr	740	745	750
Val	Asp	Gly	Asp	Gly	Tyr	Asn	Val	Ala	Gln	Cys	Asn	Met	Thr	Lys	Trp	755	760	765
Phe	Leu	Val	Gln	Met	Leu	Ala	Asn	Tyr	Asn	Ile	Gly	Tyr	Gln	Gly	Phe	770	775	780

Tyr Ile Pro Glu Gly Tyr Lys Asp Arg Met Tyr Ser Phe Phe Arg Asn  
 785 790 795 800  
 Phe Gln Pro Met Ser Arg Gln Val Val Asp Glu Val Asn Tyr Lys Asp  
 805 810 815  
 Phe Lys Ala Val Ile Tyr Gln His Asn Asn Ser Gly Phe Val Gly Tyr  
 820 825 830  
 Met Ala Pro Thr Met Arg Gln Gly Gln Pro Tyr Pro Ala Asn Tyr Pro  
 835 840 845  
 Tyr Pro Leu Ile Gly Thr Thr Ala Val Asn Ser Val Thr Gln Lys Lys  
 850 855 860  
 Phe Leu Cys Asp Arg Thr Met Trp Arg Ile Pro Phe Ser Ser Asn Phe  
 865 870 875 880  
 Met Ser Met Gly Ala Leu Thr Asp Leu Gly Gln Asn Met Leu Tyr Ala  
 885 890 895  
 Asn Ser Ala His Ala Leu Asp Met Thr Phe Glu Val Asp Pro Met Asp  
 900 905 910  
 Glu Pro Thr Leu Leu Tyr Leu Leu Phe Glu Val Phe Asp Val Val Arg  
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 945 950

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 35 40 45  
 Gly Leu Val Gln Phe Ala Arg Ala Thr Asp Thr Tyr Phe Ser Leu Gly  
 50 55 60  
 Asn Lys Phe Arg Asn Pro Thr Val Ala Pro Thr His Asp Val Thr Thr  
 65 70 75 80  
 Asp Arg Ser Gln Arg Leu Thr Leu Arg Phe Ser Pro Ser Asp Arg Glu  
 85 90 95  
 Asp Thr Thr Tyr Ser Tyr Lys Ala Arg Phe Thr Leu Ala Gly Asp Asn  
 100 105 110  
 Arg Val Leu Asp Met Ala Ser Thr Tyr Phe Asp Ile Arg Gly Val Leu  
 115 120 125

Asp 130	Arg	Gly	Pro	Ser	Phe	Lys 135	Pro	Tyr	Ser	Gly	Thr 140	Ala	Tyr	Asn	Ser
Leu 145	Ala	Pro	Lys	Gly	Ala 150	Pro	Asn	Ser	Ser	Gln 155	Trp	Ala	Asp	Lys	Glu 160
Arg	Val	Asn	Gly	Gly 165	Gly	Asn	Thr	Lys	Asp 170	Val	Thr	Lys	Thr	Phe 175	Gly
Val	Ala	Ala	Met 180	Gly	Gly	Glu	Asp	Ile 185	Thr	Glu	Lys	Gly	Leu 190	Lys	Ile
Gly	Thr	Asp 195	Thr	Thr	Ala	Asn	Glu 200	Pro	Ile	Phe	Ala	Asp 205	Lys	Asn	Phe
Gln 210	Pro	Glu	Pro	Gln	Val	Gly 215	Glu	Glu	Asn	Gln	Glu 220	Thr	Phe	Val	Phe
Tyr 225	Gly	Gly	Arg	Ala	Leu 230	Lys	Lys	Glu	Thr	Lys 235	Met	Lys	Pro	Cys	Tyr 240
Gly	Ser	Phe	Ala	Arg 245	Pro	Thr	Asn	Glu	Lys 250	Gly	Gly	Gln	Ala	Lys 255	Phe
Ile	Ile	Gly	Asp 260	Asn	Gly	Gln	Pro	Thr 265	Glu	Asn	His	Asp	Ile 270	Thr	Met
Ala	Phe	Asp 275	Thr	Pro	Gly	Gly	Thr 280	Ile	Thr	Gly	Gly	Thr 285	Gly	Gly	Pro
Gln 290	Asp	Glu	Leu	Lys	Ala	Asp 295	Ile	Val	Met	Tyr	Thr 300	Glu	Asn	Ile	Asn
Leu 305	Glu	Thr	Pro	Asp	Thr 310	His	Val	Val	Tyr	Lys 315	Pro	Gly	Lys	Glu	Asp 320
Asp	Ser	Ser	Glu	Ile 325	Asn	Leu	Val	Gln	Ser 330	Met	Pro	Asn	Arg	Pro 335	Asn
Tyr	Ile	Gly	Phe 340	Arg	Asp	Asn	Phe	Val 345	Gly	Leu	Met	Tyr	Tyr 350	Asn	Ser
Thr	Gly	Asn 355	Met	Gly	Val	Leu	Ala 360	Gly	Gln	Ala	Ser	Gln 365	Leu	Asn	Ala
Val 370	Val	Asp	Leu	Gln	Asp	Arg 375	Asn	Thr	Glu	Leu	Ser 380	Tyr	Gln	Leu	Leu
Asp 385	Ser	Leu	Gly	Asp	Arg 390	Thr	Arg	Tyr	Phe	Ser 395	Met	Trp	Asn	Ser	Ala 400
Val	Asp	Ser	Tyr	Asp 405	Pro	Asp	Val	Arg	Ile 410	Ile	Glu	Asn	His	Gly 415	Val
Glu	Asp	Glu	Leu 420	Pro	Asn	Tyr	Cys	Phe 425	Pro	Leu	Asp	Gly 430	Ser	Gly	Thr
Asn	Ser	Ala 435	Phe	Gln	Gly	Lys	Ile 440	Lys	Gln	Asn	Gln	Asp 445	Gly	Asp	Val
Asn 450	Asp	Asp	Trp	Glu	Lys	Asp 455	Asp	Lys	Val	Ser	Thr 460	Gln	Asn	Gln	Ile
Cys 465	Lys	Gly	Asn	Glu	Tyr 470	Ala	Met	Glu	Ile	Asn 475	Leu	Gln	Ala	Asn	Leu 480

Trp	Lys	Ser	Phe	Leu	Tyr	Ser	Asn	Val	Ala	Leu	Tyr	Leu	Asp	Ser	Tyr
				485					490					495	
Lys	Tyr	Thr	Pro	Ala	Asn	Val	Thr	Leu	Pro	Thr	Asn	Thr	Asn	Thr	Glu
			500					505					510		
Tyr	Met	Asn	Gly	Arg	Val	Val	Ala	Pro	Ser	Leu	Val	Asp	Ala	Tyr	Ile
		515					520					525			
Asn	Ile	Gly	Ala	Arg	Trp	Ser	Leu	Asp	Pro	Met	Asp	Asn	Val	Asn	Pro
	530					535					540				
Phe	Asn	His	Arg	Asn	Ala	Gly	Leu	Arg	Tyr	Arg	Ser	Asn	Ala	Ser	Gly
545					550					555					560
Gln	Arg	Pro	Leu	Arg	Ala	Leu	Pro	His	Pro	Ser	Ala	Pro	Lys	Val	Leu
				565					570					575	
Cys	His	Gln	Glu	Pro	Ala	Pro	Ala	Pro	Gly	Leu	Leu	His	Leu	Arg	Val
			580					585					590		
Glu	Leu	Pro	Gln	Gly	Arg	Gln	His	Asp	Ala	Glu	Phe	Pro	Arg	Lys	Arg
		595					600					605			
Pro	Ala	Arg	Arg	Arg	Arg	Leu	Arg	Ala	Leu	Arg	Gln	Arg	Gln	Pro	Leu
	610					615					620				
Cys	His	Ile	Leu	Pro	His	Gly	Ala	Gln	His	Arg	Leu	His	Pro	Gly	Ser
625					630					635					640
His	Ala	Ala	Gln	Arg	His	Gln	Arg	Pro	Val	Leu	Gln	Arg	Leu	Pro	Leu
				645					650					655	
Arg	Gln	His	Ala	Leu	Pro	His	Pro	Gly	Gln	Gly	His	Gln	Arg	Ala	His
			660					665					670		
Leu	His	Pro	Ala	Gln	Leu	Gly	Arg	Leu	Ser	Arg	Leu	Glu	Phe	His	Pro
		675					680					685			
Ala	Gln	Asp	Gln	Gly	Asn	Ser	Phe	Pro	Arg	Leu	Gly	Phe	Arg	Pro	Leu
	690					695					700				
Leu	Cys	Leu	Leu	Gly	Leu	His	Pro	Leu	Pro	Arg	Arg	Asp	Leu	Leu	Pro
705					710					715					720
Gln	Pro	His	Leu	Gln	Glu	Gly	Leu	His	His	Val	Arg	Leu	Leu	Gly	Gln
				725					730					735	
Leu	Ala	Arg	Gln	Arg	Thr	Ala	Val	Thr	Pro	Asn	Glu	Phe	Glu	Ile	Lys
			740					745					750		
Arg	Ser	Val	Asp	Gly	Glu	Gly	Tyr	Asn	Val	Ala	Gln	Cys	Met	Thr	Lys
		755					760					765			
Asp	Trp	Phe	Leu	Val	Gln	Met	Leu	Ser	His	Tyr	Asn	Ile	Gly	Tyr	Gln
	770					775					780				
Gly	Phe	His	Val	Pro	Glu	Gly	Tyr	Lys	Asp	Arg	Met	Tyr	Ser	Phe	Phe
785					790					795					800
Arg	Asn	Phe	Gln	Pro	Met	Ser	Arg	Gln	Val	Val	Asp	Glu	Ile	Asn	Tyr
				805					810					815	
Lys	Asp	Tyr	Ala	Val	Thr	Leu	Pro	Phe	Gln	His	Asn	Asn	Ser	Gly	Phe



820	825	830	
Thr Gly Tyr Leu Ala Pro Thr Met Arg Gln Gly Gln Pro Tyr Pro Ala			
835	840	845	
Asn Phe Pro Leu Ile Gly Ser Thr Ala Val Pro Ser Val Thr Gln Lys			
850	855	860	
Lys Phe Leu Cys Asp Arg Val Met Trp Arg Ile Pro Phe Ser Ser Asn			
865	870	875	880
Phe Met Ser Met Gly Ala Leu Thr Asp Leu Gly Gln Asn Met Leu Tyr			
885	890		895
Ala Asn Ser Ala His Ala Leu Asp Ile Thr Phe Glu Val Asp Pro Met			
900	905		910
Asp Glu Pro Thr Leu Leu Tyr Leu Leu Phe Glu Val Phe Asp Val Val			
915	920		925
Val His Gln Pro His Arg Gly Val Ile Glu Ala Val Tyr Leu Arg Thr			
930	935		940
Pro Phe Ser Ala Gly Asn Ala Thr Thr			
945	950		
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 <210> 55  
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